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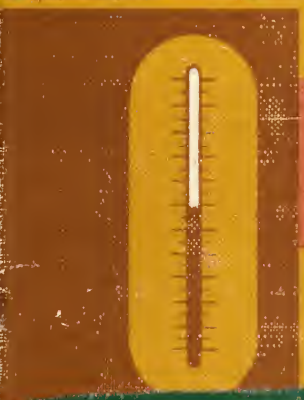

Seeing through arithmetic

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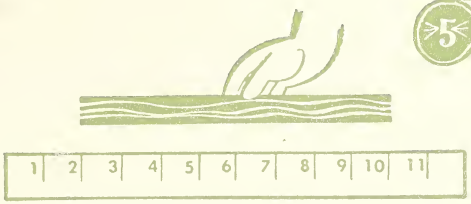

Seeing through arithmetic

4

by Maurice L. Hartung, Henry Van Engen,
and Lois Knowles

Scott, Foresman and Company

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The Table of Contents, Index, and information concerning the vocabulary
are on pages 252 to 256.

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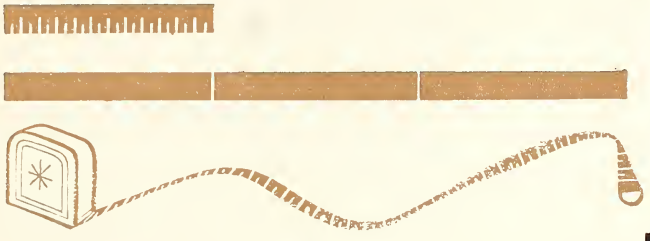
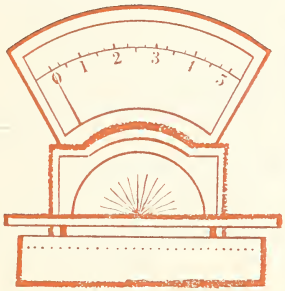
Moving forward

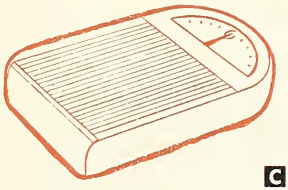
In this lesson you will learn more about measuring, and why rulers have marks and numerals on them.



A

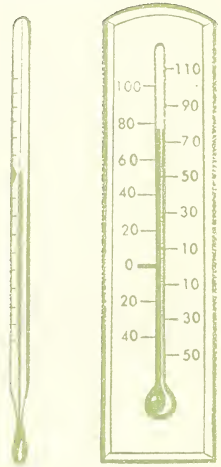
B





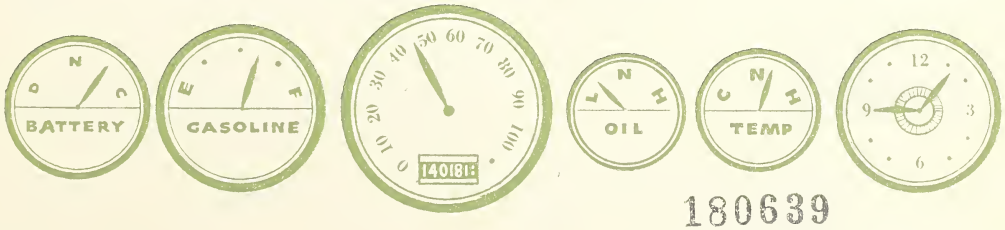
C

D



E

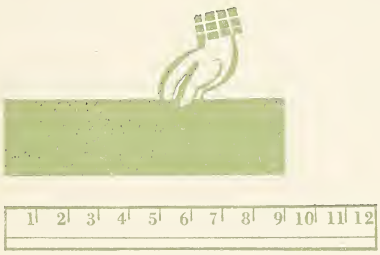
F



180639

A

B



1 foot

C

---

1 foot

D

A Look at Picture A. Which is the correct way to measure the length of the stick? Why?

B What do the numerals on the ruler in Picture A show?

C How long is the stick in Picture A?

D Find the beginning point on the ruler in Picture B. Does it have a numeral? The numeral that could be put here is 0.

E If you were measuring a stick with the ruler in Picture B, which mark on the ruler would you put at one end of the stick? Why?

F How is the end point on the ruler in Picture B marked? How many inches are on this ruler?

G How long is the card in Picture C?

H How long is the card in Picture D?

I Which ruler can best be used to measure with, the one in Picture C or the one in Picture D? Why?

E

J Could any other numerals be put on Ruler E? What are these numerals? How do you know?

K The marks and numerals on a ruler are called a scale. How far does the scale on the ruler in Picture E go?

L Is the stick in Picture E 10 inches long? How do you know?

M What would be an easier way to measure the stick in Picture E?

F

N When might you want to use a ruler in the way shown in Picture E?

O Is 1 inch on your ruler the same length as 1 inch on any other ruler? How do you know?

G

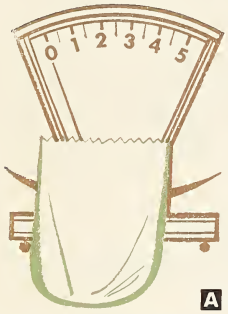
P Is Don using his ruler correctly in Picture F? How do you know?

Q What is wrong with the way Don is measuring the table in Picture G?

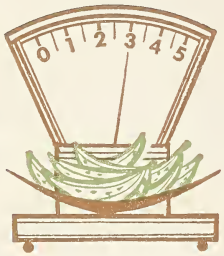
Now you should be able to measure correctly with a ruler.

Moving forward

On pages 6 and 7 you will learn about how weight is measured and how weight scales are made.



A



B

A How do you know that nothing is being weighed in Picture A?

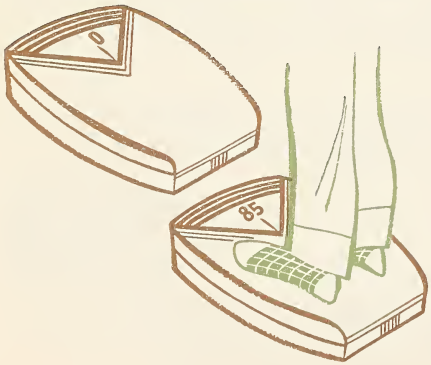
B The same scales are shown in Picture B. Two things in this picture show that something is being weighed. What are they?

C In Picture B, to what numeral does the pointer point? The numerals here show pounds.

C

D When the bananas were put on the weight scales in Picture B, the pointer moved from 0 to 3. How many pounds do the bananas weigh?

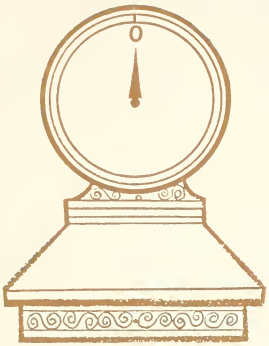
E Do you know how much the package in Picture C weighs? Why or why not?



D

F Look at Picture D. How much does Tom weigh? Are you sure? Why or why not?

G A box of candy weighs 1 pound when weighed on the store scales. Should it weigh 1 pound when it is weighed on your scales at home?



E

H These three pictures show you how to put numerals and marks on weight scales. Picture E shows how you could begin. The little mark shows where the pointer is when there is nothing on the scale. Why is the numeral 0 put at this mark?

F

I Picture F shows that you have put something that you know weighs 1 pound on your scales. Where is the pointer now? Why is a mark put there? Why is the numeral 1 put at this mark?

J In Picture G another pound is on the scales. Where is the pointer now? Why is a mark put there? What numeral belongs at the mark?

G

K How would you finish putting the marks and numerals on your scales?

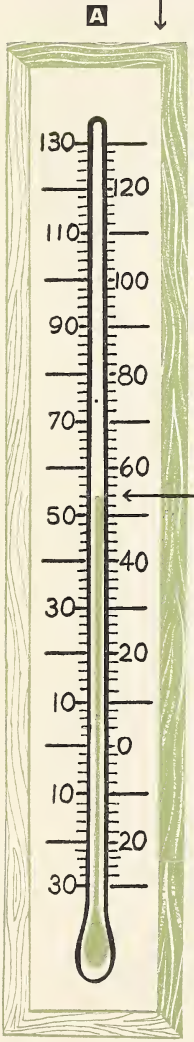
L How would you make a foot ruler that is to be marked in inches?

Now you should know how scales are used to measure weight.

Moving forward

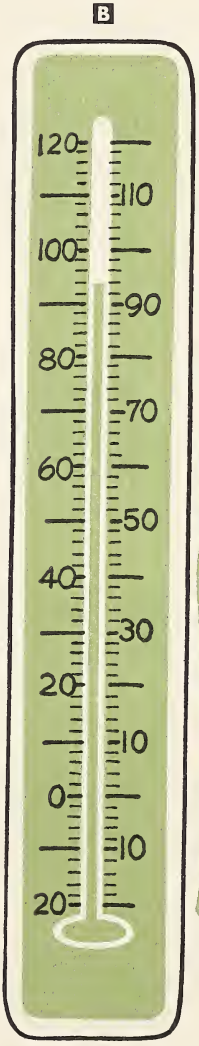
Pages 8 and 9 show you how to read a thermometer to find how warm or how cold something is.

This is a thermometer.



We use thermometers to measure how warm or how cold something is. When the liquid in this thermometer moves up or down from one mark to the next, the temperature has changed. It has changed 2 degrees.

Here the liquid is at 54. This shows that the temperature is 54 degrees. We write 54 degrees as 54°.



A Does Thermometer B show a temperature of 94° or 92°? How do you know?

B Find 0° on Thermometer C. Is the temperature shown on Thermometer C above 0° or below 0°? How do you know? Thermometer C shows a temperature of about 12° below 0.

C Find 0° on Thermometers A and B. Are the temperatures shown on these thermometers above 0° or below 0°?

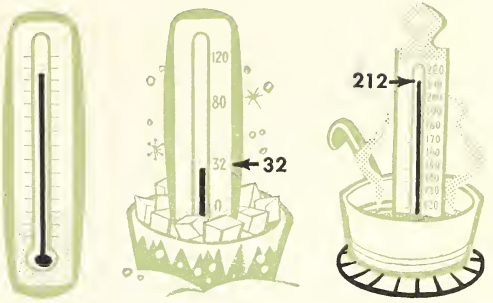
D Does Thermometer D show 4° below 0, 2° below 0, or 16° below 0?

E The marks and the numerals on a thermometer are the temperature scale. On Thermometer A the scale goes from 30 degrees below 0 to how many degrees above 0?

F What is the highest temperature that can be measured with Thermometer B? With Thermometer C? With Thermometer D?

G What are the lowest temperatures that can be measured with Thermometers B, C, and D?

H We use a thermometer to measure how warm or how cold the air is. As the air gets warmer, the liquid in the thermometer moves up the scale. What does the liquid do when the air gets colder?



E

F Water freezes at 32° above 0.

G Water boils at 212° above 0.

I Could the thermometers on page 8 be used to measure the temperature of the air? Why?

J Could you use Thermometer E above to measure temperature? Why?

K Why does a farmer sometimes worry about his plants on a day when the temperature is 35°? Picture F will help you.

L The scale on a thermometer used in cooking begins at a high temperature. Why? Picture G will help you.

M Which thermometers on page 8 show temperatures below freezing?

N Why would the thermometers on page 8 not be useful in cooking?

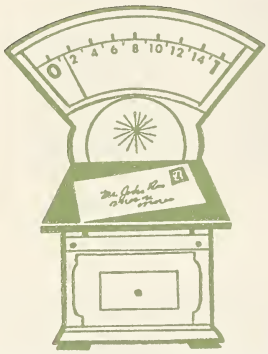
Now you should be able to read the thermometers in your home.

Keeping skillful

A

B

C



D

E

A What temperature is shown on Thermometer A? On Thermometer B? On Thermometer C?

B Which thermometer shows the lowest temperature?

C Which thermometer shows the highest temperature?

D Do you think that the numerals on the scale in Picture D show pounds or ounces? Why?

E In Picture E, Mary's mother is putting a gallon of honey into quart jars. Does she have enough jars? How do you know?

F Which is more, a pound of candy or 14 ounces of candy?

G Which is longer, a ribbon 1 yard long or a ribbon 4 feet long?

H Which is less, 3 pints of milk or 1 quart of milk?

I Which is less, 30 inches of string or 1 yard of string?

J Which is more, 1 gallon of milk or 5 quarts of milk?

K Which is less, 20 ounces of candy or 1 pound of candy?

L Which is shorter, a ribbon 1 foot long or a ribbon 10 inches long?

1 foot = 12 inches
1 yard = 36 inches
1 yard = 3 feet
1 pound = 16 ounces
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 8 pints

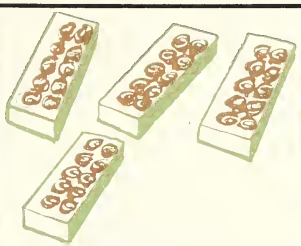
Looking back

Pages 11 to 15 will help you check up on reading and writing numerals and on understanding numbers.

tens	ones
7	5

75

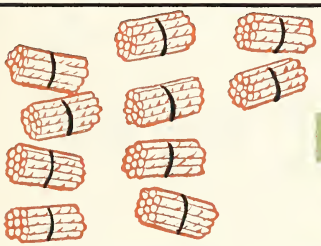
seventy-five **A**



tens	ones
4	

40

forty **B**



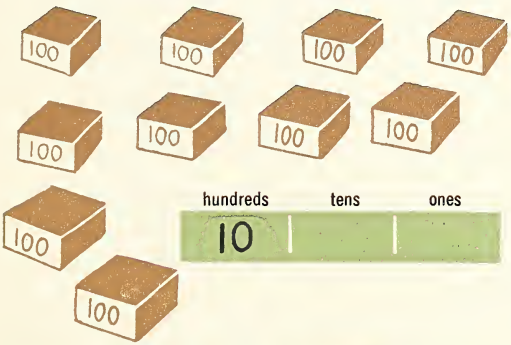
tens	ones
10	

C

hundreds	tens	ones
1		

100

one hundred



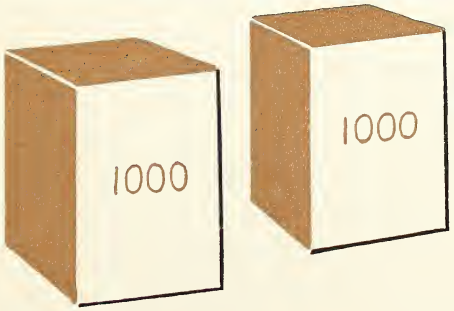
hundreds	tens	ones
10		

D

thousands	hundreds	tens	ones
1			

1000

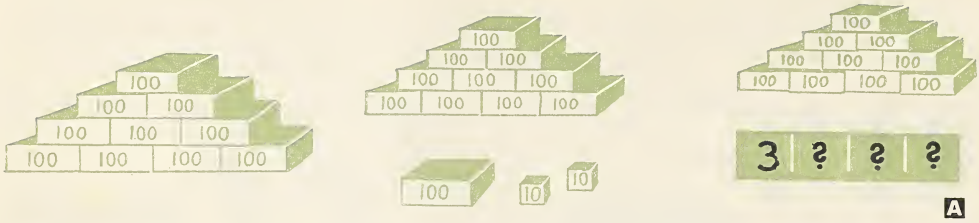
one thousand



thousands	hundreds	tens	ones
2	4	1	8

2418

two thousand four hundred eighteen **E**



A What numerals belong where the question marks are in each picture above?

B In the number shown in Picture A the 3 is in what place? The 1 is in what place?

C In the number shown in Picture C the 5 is in what place?

D In which picture are there no ones? In which picture are there no tens?

E For which of these numbers is 4 in tens' place?

F For which of these numbers is 5 in hundreds' place?

G What number is shown in each picture?

A In 5078, the 5 is in what place?

B In 647, the 7 is in what place?

C In 8091, the 0 is in what place?

D In 7840, the 4 is in what place?

E In 6139, what is in tens' place?

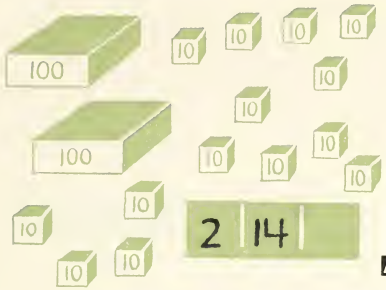
F In 2304, what is in thousands' place?

G In 1065, what is in hundreds' place?

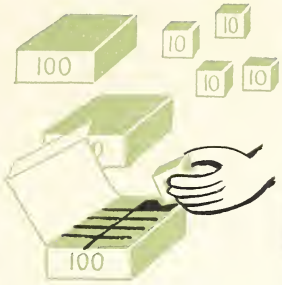
H Write a numeral that has 0 in tens' place.

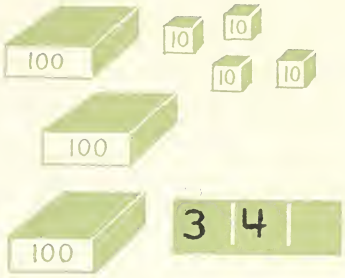
I Write a numeral that has 0 in hundreds' place.

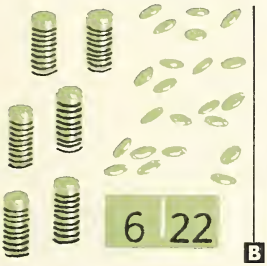
J Write a numeral that has 0 in both tens' and ones' places.



A

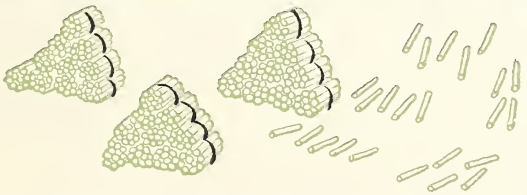






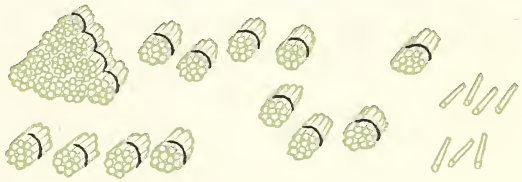
B

C



3 hundreds no tens ▭ ones
3 hundreds ▭ tens 4 ones = ▭

D



1 hundred ▭ tens 7 ones
▭ hundreds 2 tens 7 ones = ▭

E

A 5 thousands 26 hundreds 2 tens no ones =
7 thousands ▭ hundreds 2 tens no ones.
The number is ▭.

B 2 thousands 14 hundreds 6 tens 9 ones =
▭ thousands 4 hundreds 6 tens 9 ones.
The number is ▭.

C 4 hundreds 18 tens 3 ones =
▭ hundreds 8 tens 3 ones.
The number is ▭.

D 8 tens 19 ones = 9 tens ▭ ones

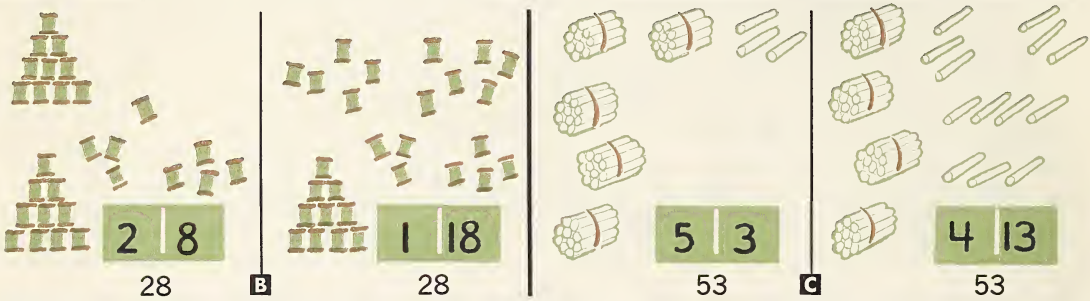
E 5 thousands 23 hundreds =
▭ thousands 3 hundreds

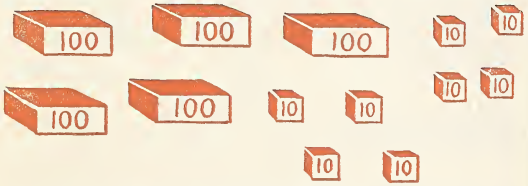
F 7 hundreds 28 tens =
▭ hundreds ▭ tens

G 18 tens 5 ones =
▭ hundred ▭ tens ▭ ones

H 19 tens 15 ones =
▭ hundreds ▭ tens ▭ ones

I 7 tens 20 ones =
▭ tens ▭ ones

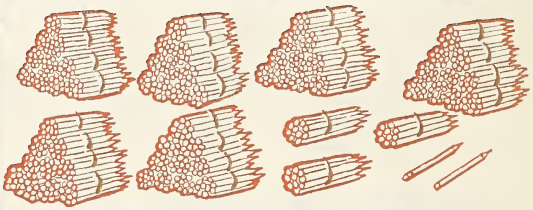




580 = ▭ hundreds ▭ tens ▭ ones

580 = 5 hundreds 7 tens ▭ ones

D



632 = ▭ hundreds ▭ tens ▭ ones

632 = 5 hundreds ▭ tens 2 ones

E

A 94 = 8 tens ▭ ones

B 27 = 1 ten ▭ ones

C 82 = ▭ tens 12 ones

D 256 = 1 hundred ▭ tens 6 ones

E 360 = ▭ hundreds 16 tens

F 503 = 4 hundreds 9 tens ▭ ones

G 645 = ▭ hundreds 14 tens ▭ ones

H 7200 = 6 thousands ▭ hundreds

I 4100 = ▭ thousands 11 hundreds

J 909 = 8 hundreds 9 tens ▭ ones

K 3000 = 2 thousands ▭ hundreds

L 864 = ▭ hundreds 16 tens ▭ ones

M 864 = 7 hundreds 15 tens ▭ ones

N 5500 = ▭ thousands 15 hundreds

O 7000 = 6 thousands ▭ hundreds

P 910 = 8 hundreds ▭ tens

Q 6300 = 5 thousands ▭ hundreds

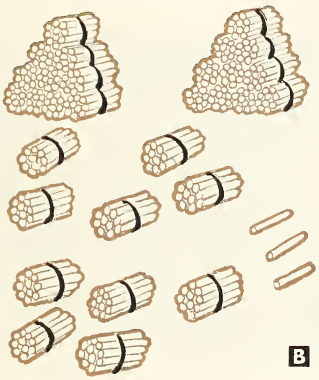
R 9700 = ▭ thousands 17 hundreds

A

A What number is shown in Picture A?
B What number is shown in Picture B?
C What number is shown in Picture C?

Read

A	38	308	378	3008	3078	3780	3781
B	50	502	512	5120	5026	5260	5269
C	85	805	835	8005	8050	8650	8652



B

Write the numerals.

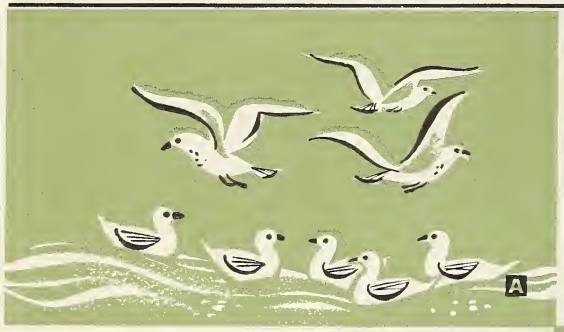
A two hundred thirty-nine
B six thousand forty
C ninety-eight
D four thousand one
E eight hundred seventy
F seven thousand one hundred fifty-two
G nine hundred thirteen
H one thousand eight hundred sixty-seven

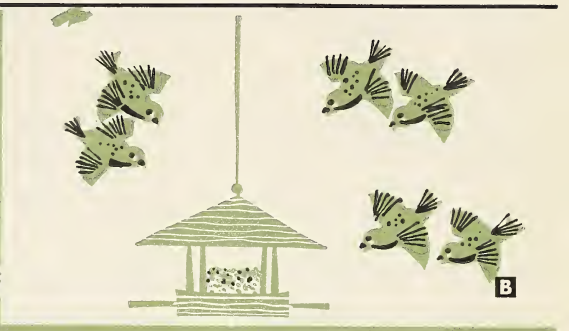
C

A 5390 = ▭ thousands ▭ hundreds ▭ tens ▭ ones
B 539 = ▭ thousands ▭ hundreds ▭ tens ▭ ones
C In 8601, the 8 is in what place?
D In 502, what is in tens' place?
E In 7769, what is in ones' place?
F In 1624, the 6 is in what place?
G 2 thousands no hundreds 6 tens 4 ones = ▭
H 9 thousands no hundreds no tens 7 ones = ▭
I 672 can be 5 hundreds ▭ tens 2 ones.
J 83 can be ▭ tens 13 ones.
K 904 can be 8 hundreds ▭ tens 4 ones.

Now you should be able to read and write any numeral from 1 to 9999.

Looking back You will now see how groups join and separate.





Checking up

The work on this page will help you check up on addition.

A

B

A Mary and Betty are looking for acorns. Don, Carol, and Ann are coming to help them. Then how many children will be looking for acorns?

$2+3=\square$

B Tom has collected 7 butterflies. Bill has collected 9 butterflies. How many butterflies in all have the two boys collected?

$7+9=\square$

Test 1

A	$6+3=\square$	L	$1+9=\square$
B	$2+8=\square$	M	$4+5=\square$
C	$3+4=\square$	N	$7+3=\square$
D	$2+3=\square$	O	$6+2=\square$
E	$5+3=\square$	P	$2+4=\square$
F	$7+1=\square$	Q	$2+7=\square$
G	$2+6=\square$	R	$6+1=\square$
H	$4+3=\square$	S	$1+8=\square$
I	$1+4=\square$	T	$2+5=\square$
J	$3+7=\square$	U	$5+5=\square$
K	$5+4=\square$	V	$1+3=\square$

Test 2

A	$8+6=\square$	L	$9+7=\square$
B	$5+7=\square$	M	$3+8=\square$
C	$9+9=\square$	N	$6+9=\square$
D	$6+5=\square$	O	$8+7=\square$
E	$8+8=\square$	P	$7+6=\square$
F	$5+9=\square$	Q	$9+2=\square$
G	$6+6=\square$	R	$7+7=\square$
H	$3+9=\square$	S	$5+8=\square$
I	$9+8=\square$	T	$9+6=\square$
J	$4+9=\square$	U	$8+4=\square$
K	$8+5=\square$	V	$7+9=\square$

Learning how

This lesson will help you remember how to add numbers that have one figure.

see

A

Mary found 7 acorns. Ann found 8 acorns. Betty found 6 acorns. How many acorns did the girls find?

$7+8+6=\square$ ← You must find this number.

B

First put 8 acorns with 7 acorns.

$$\begin{array}{r} 7 \\ 8 \\ 6 \\ \hline \end{array}$$

First add 8 to 7. Remember the 15.

C

Now put the 6 acorns with the 15 acorns.

$$\begin{array}{r} 7 \\ 8 \\ 6 \\ \hline \end{array}$$

Now add 6 to the 15 that you remember.

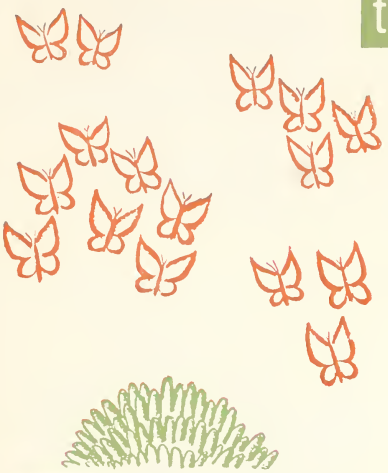
D

The girls found 21 acorns in all.

$$\begin{array}{r} 7 \\ 8 \\ 6 \\ \hline 21 \end{array}$$

Write 21 here. 21 is the sum.

$7+8+6=21$



think

How many butterflies are there in all?

$2+4+7+3=$ ▢ ← You must find this number.

$$\begin{array}{r} 2 \\ 4 \\ 7 \\ 3 \\ \hline 16 \end{array}$$

What numbers do you add first?
What do you add next?
What do you add last?
What is the sum?

There are ▢ butterflies in all.

try

A $6+9+2=17$
B $5+4+7=16$
C $5+2+6+5=18$
D $7+6+4=17$
E $3+1+8=12$
F $3+8+2+8=21$
G $9+7+8=24$
H $2+9+1+8=20$
I $7+7+9=23$
J $8+4+3+7=22$
K $2+1+8+5=16$
L $5+8+8+3=24$

do

A In the woods Betty counted 5 birds, Bill counted 7 birds, Mary counted 3 birds, and Don counted 5 birds. The children counted how many birds in all?
$5+7+3+5=$ ▢

B The children brought plants to school. Tom brought 3 plants, Carol brought 2 plants, and Ellen brought 3 plants. How many plants in all did they bring?
$3+2+3=$ ▢

C $4+2+3=$ ▢
D $7+2+8=$ ▢
E $2+6+6+9=$ ▢
F $6+7+5=$ ▢
G $9+1+4+7=$ ▢
H $6+1+5+9=$ ▢
I $8+7+7=$ ▢
J $2+9+3+5=$ ▢
K $5+6+4+8=$ ▢
L $3+3+8=$ ▢
M $4+1+5+8=$ ▢
N $7+7+6+3=$ ▢
O $7+6+9=$ ▢
P $5+1+3+2=$ ▢
Q $8+9+7+6=$ ▢

Now you should know how to add numbers that have one figure.

Learning how

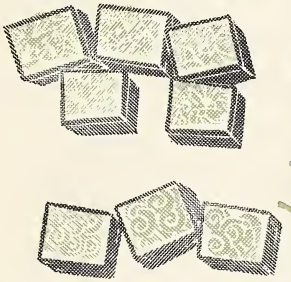
This lesson will help you remember how to add numbers that have two figures.

see

A

Ann has 56 shells. Betty has 38 shells. The girls have how many shells in all?

$56+38=\square$ ← You must find this number.

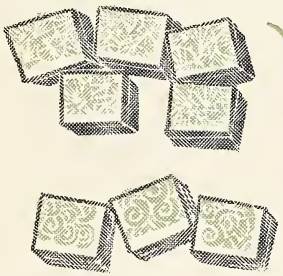


B

← Put 8 shells with 6 shells.

← Add the ones. There are 14 ones.

$$\begin{array}{r} 56 \\ 38 \\ \hline \end{array}$$



C

← Put 10 of the 14 shells in a box. You have 4 shells left over.

$$\begin{array}{r} 56 \\ 38 \\ \hline 4 \end{array}$$

14 is 1 ten 4 ones.

Write 4 here to show there are 4 ones in the answer. ←

D

← Put the new box of 10 with the other boxes of 10.

$$\begin{array}{r} 1 \\ 56 \\ 38 \\ \hline 4 \end{array}$$

← Write the ten in tens' place.

Put the boxes of 10 together.

E

Add the tens.

$$\begin{array}{r} {\scriptstyle 1} \\ 56 \\ +\ 38 \\ \hline 94 \end{array}$$

There are 9 tens.

Write 9 here to show there are 9 tens in the answer.

F

The girls have 94 shells in all.

$56 + 38 = 94$

think

A

John has 36 stones. Bill has 24 stones. The two boys have how many stones in all?

$36 + 24 = \square$

You must find this number.

What do you put together first?

B

What do you add first?

How many ones are there?

$$\begin{array}{r} 36 \\ +\ 24 \\ \hline \end{array}$$

Now turn the page.

What do you do with the 10 stones?

C

36
24
0

Think of the 10 ones as ▤ ten.

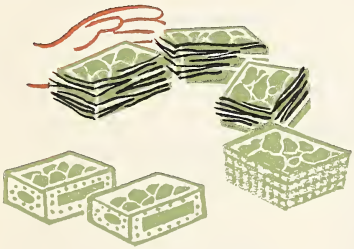
Why do you write 0 here?

What do you do with the new box of 10?

D

1
36
24
0

Why is the 1 written here?



What do you put together now?

E

What do you add now?
How many tens are there?

1
36
24
60

What does the 6 show?

F

The boys have ▤ stones in all.

36 + 24 = ▤

try

A Mary found 23 nuts in the woods. Peggy found 14 nuts. Ellen found 22 nuts. How many nuts in all did the girls find?

$23 + 14 + 22 = \square$

$$\begin{array}{r} 23 \\ 14 \\ 22 \\ \hline 59 \end{array}$$

B Dick collected 19 leaves, and Don collected 15 leaves. The two boys collected how many leaves?

$19 + 15 = \square$

$$\begin{array}{r} {\scriptstyle 1} \\ 19 \\ 15 \\ \hline 34 \end{array}$$

1 ← Either remember this ten or write it.

C $70 + 56 = \square$

$$\begin{array}{r} 70 \\ 56 \\ \hline 126 \end{array}$$

Why do we write 1 in hundreds' place?

D $29 + 7 + 59 = \square$

$$\begin{array}{r} 29 \\ 7 \\ 59 \\ \hline 95 \end{array}$$

E $63 + 58 + 21 = \square$

$$\begin{array}{r} 63 \\ 58 \\ 21 \\ \hline 142 \end{array}$$

do

A In the woods one class counted 28 birds, and the other class counted 34 birds. How many birds did the two classes count?

$28 + 34 = \square$

B Fifteen birds were feeding on the ground in the woods. Twelve more birds flew down to feed. Then how many birds were feeding?

$15 + 12 = \square$

C $73 + 7 + 18 = \square$

D $32 + 56 = \square$

E $12 + 51 = \square$

F $68 + 29 = \square$

G $47 + 38 = \square$

H $90 + 50 = \square$

I $50 + 24 = \square$

J $49 + 39 = \square$

K $4 + 57 + 38 = \square$

L $13 + 28 + 52 = \square$

M $42 + 56 + 75 = \square$

N $66 + 71 + 24 = \square$

A $57 + 37 = \square$

B $41 + 17 + 38 = \square$

C $9 + 65 + 20 = \square$

D $45 + 35 = \square$

E $29 + 47 + 54 = \square$

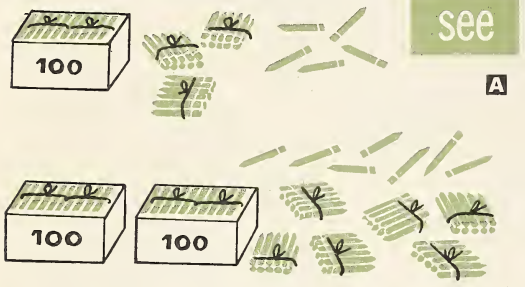
F $82 + 76 + 30 = \square$

Now you should be able to add any numbers with two figures in them.

Learning how

This lesson will help you remember how to add numbers that have three figures.

see



A

There are 135 pencils on one shelf and 267 pencils on another shelf. How many pencils are there in all?

$135+267=\square$ ← You must find this number.

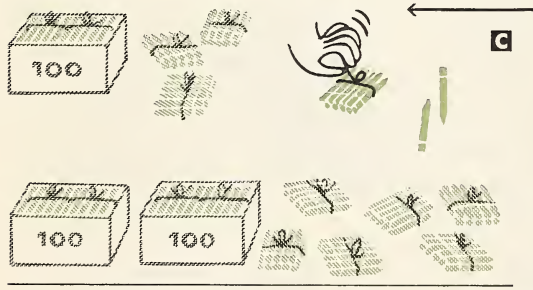
B

← Put 7 pencils with 5 pencils.

↙ Add the ones.

135
267

There are 12 ones.



C

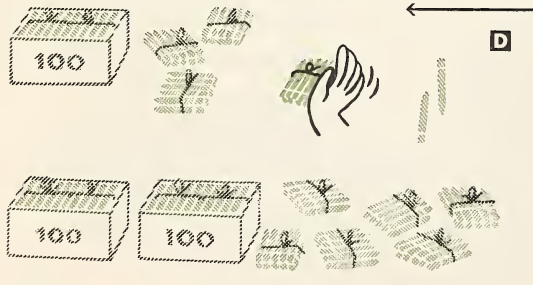
← Make a bundle of 10 pencils. There are 2 pencils left over.

135
267

12 is 1 ten 2 ones.

Write 2 here to show there are 2 ones in the answer. ←

2

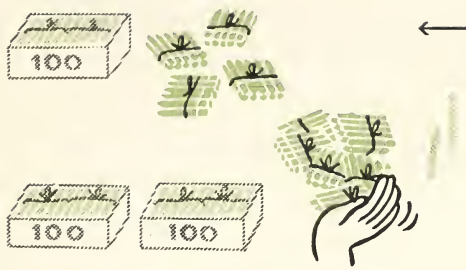


D

← Put the new bundle of 10 pencils with the other bundles of ten.

1 ← Write the new ten in tens' place.

135
267
2

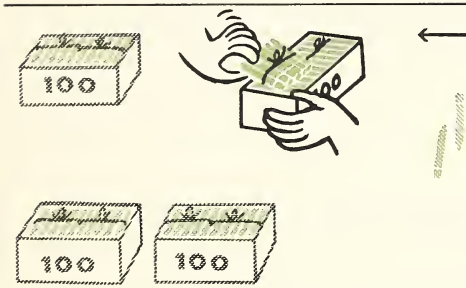


Now put the bundles of 10 together.

E

Add the tens.
There are 10 tens.

$$\begin{array}{r} {\scriptstyle 1} \\ 135 \\ +\ 267 \\ \hline 402 \end{array}$$



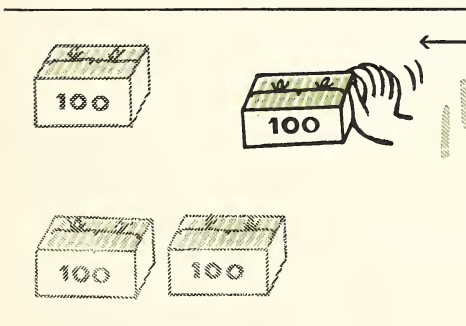
Put the 10 tens in a box of 100.

F

$$\begin{array}{r} {\scriptstyle 1} \\ 135 \\ +\ 267 \\ \hline 02 \end{array}$$

10 tens equal 1 hundred.

Write 0 here to show there are no tens in the answer.

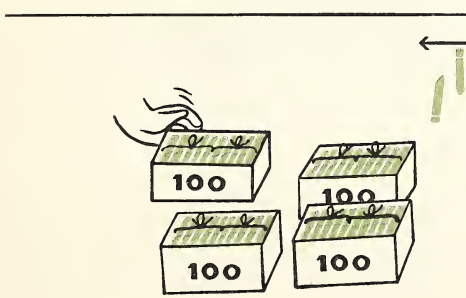


Put the new box of 100 with the other hundreds.

G

Write the new hundred in hundreds' place.

$$\begin{array}{r} {\scriptstyle 1\ 1\ 0} \\ 135 \\ +\ 267 \\ \hline 02 \end{array}$$



Put the boxes of 100 together.

H

Add the hundreds.
There are 4 hundreds.

$$\begin{array}{r} {\scriptstyle 1\ 1\ 0} \\ 135 \\ +\ 267 \\ \hline 402 \end{array}$$

Write 4 in hundreds' place.

$135 + 267 = 402$

There are 402 pencils in all.

think

There are 126 pencils, 209 pencils, and 83 pencils. How many pencils are there in all?

$126+209+83=\square$ You must find this number.

A

What do you add first?
How many ones are there?

$$\begin{array}{r} 126 \\ 209 \\ 83 \\ \hline 8 \end{array}$$

Why do you write 8 here?

B

Why is 1 written here?
What do you add now?
How many tens are there?

$$\begin{array}{r} {\scriptstyle 1} \\ 126 \\ 209 \\ 83 \\ \hline 18 \end{array}$$

What does this 1 show?

C

Why was 1 written in hundreds' place? Now what do you add?
How many hundreds are there?

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 126 \\ 209 \\ 83 \\ \hline 418 \end{array}$$

Why do you write 4 here and not 3?

There are $\square$ pencils in all.
$126+209+83=418$

try

A The class collected 143 pine cones. Betty brought in 62 more pine cones. How many pine cones did the class have then?

143 + 62 = ▒

```
 1
143
 62
---
205
```

← Either remember this hundred or write it.

B The class had 236 shells. Mary's father gave them a box of 120 shells. Then the class had how many shells?

236 + 120 = ▒

```
236
120
---
356
```

C 528 + 372 = ▒

```
528
372
---
900
```

D 654 + 271 + 438 = ▒

```
654
271
438
----
1363
```

↑ Why do we write 1 in thousands' place?

E 402 + 176 = ▒

```
402
176
---
578
```

do

A Jim read 86 pages in one book and 112 pages in another book. He read how many pages in all?

86 + 112 = ▒

B There were 147 pencils in the room. Carol brought 300 more pencils. Then there were how many pencils?

147 + 300 = ▒

C 45 + 365 + 421 = ▒
D 716 + 84 = ▒
E 83 + 79 + 90 = ▒
F 155 + 432 = ▒
G 68 + 53 + 149 = ▒
H 624 + 307 = ▒
I 446 + 82 = ▒

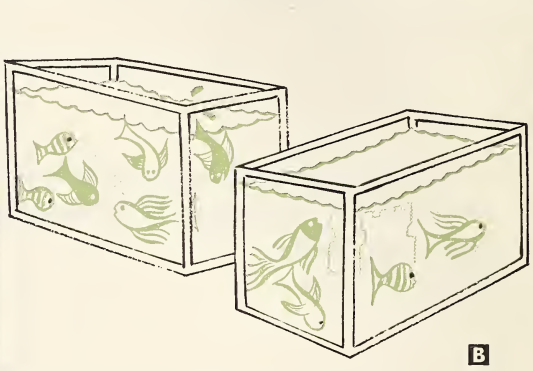
J 320 + 149 = ▒
K 72 + 609 + 125 = ▒
L 614 + 189 = ▒
M 207 + 198 + 336 = ▒
N 53 + 546 = ▒
O 825 + 207 = ▒
P 94 + 55 + 70 = ▒

A 118 + 221 + 539 = ▒
B 625 + 275 = ▒
C 225 + 707 = ▒
D 400 + 264 = ▒
E 415 + 683 + 261 = ▒
F 768 + 910 + 351 = ▒
G 849 + 817 + 538 = ▒

Now you should be able to add any numbers with three figures in them.

Using arithmetic

A



B

A Bill had three bird books. His mother gave him two more bird books. How many bird books did he have then?

3 + 2 = ▒

B The class had 2 fish tanks. There were 4 fish in one tank and 6 fish in the other tank. There were how many fish in both tanks?

4 + 6 = ▒

C One tank had 7 gallons of water in it. The other tank had 6 gallons of water. Together, the tanks had how many gallons of water in them?

7 + 6 = ▒

D Tom brought 15 pictures of birds and 17 pictures of plants to school. He brought how many pictures in all?

15 + 17 = ▒

E One weekend Bill found 19 shells on the beach. The next weekend he found 12 shells. How many shells did he find on the two weekends?

▒ + ▒ = ▒

F Don had a collection of 48 stones. He found 17 more stones. How many stones did he have then?

▒ + ▒ = ▒

G Carol gave 8 shells to Mary and 9 shells to Betty. How many shells did Carol give to the two girls?

▒ + ▒ = ▒

H The class had 7 plants. Mary's mother gave them 3 more plants. How many plants did the class have then?

▒ + ▒ = ▒

I The class had 11 butterflies. Betty brought 3 more butterflies to class. How many butterflies did the class have then?

J The class had 8 books about trees and 16 books about flowers. This was how many books in all?

K Ann had 13 postcards with pictures of butterflies and 8 postcards with pictures of birds. Ann had how many postcards in all?

L Dick read two books about fish. One book had 64 pages. The other book had 96 pages. There were how many pages in the two books?

M Don bought 2 goldfish. He paid 19¢ for one fish and 15¢ for the other. He paid how many cents for these fish?

N Peggy brought 2 packages of paper from the school storeroom. There were 200 pieces of paper in one package and 150 pieces in the other package. There were how many pieces in all?

O The fourth graders drank 24 bottles of milk on Monday. They drank 26 bottles of milk on Tuesday. They drank how many bottles of milk in all on these two days?

P Mary had 26 pine cones. She found 28 more pine cones. How many pine cones did she have then?

Q Mary painted some of the cones. She painted 12 of them red and 7 of them yellow. How many pine cones did she paint?

R Betty bought 2 boxes of crayons. She paid 15¢ for one box and 7¢ for the other box. She paid how many cents in all for the crayons?

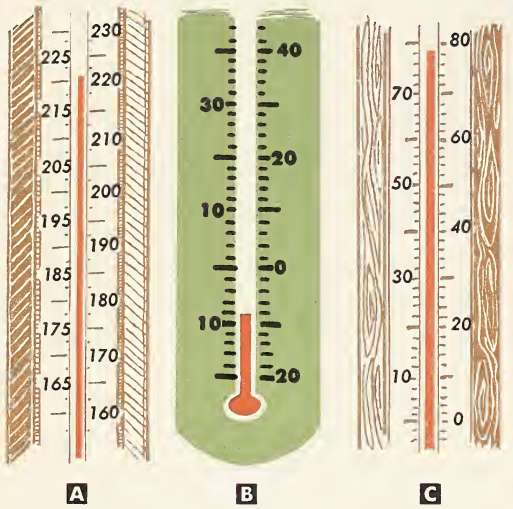
S There were 6 crayons in one box and 12 crayons in the other box. There were how many crayons in all?

T Carol bought 12 inches of red ribbon and 18 inches of blue ribbon. How many inches of ribbon in all did she buy?

Checking up

A $2+1+5=$ ▒
B $3+6+4=$ ▒
C $4+2+3+6=$ ▒
D $7+5+8=$ ▒
E $8+9+5+7=$ ▒
F $7+3+4+5=$ ▒
G $43+39=$ ▒
H $61+35=$ ▒
I $56+80+73=$ ▒
J $45+23+62=$ ▒
K $52+9+38=$ ▒
L $75+98+86=$ ▒
M $629+295=$ ▒
N $178+426=$ ▒
O $513+372=$ ▒
P $261+105+424=$ ▒
Q $389+57+536=$ ▒
R $408+579+344=$ ▒

Keeping skillful



A About what temperature is shown on Thermometer A?
B About what temperature is shown on Thermometer B?
C About what temperature is shown on Thermometer C?
D Which thermometer shows a temperature that is above the boiling point of water?
E Which thermometer shows a temperature that is below the freezing point of water?

A Are 7 inches plus 8 inches more than or less than 1 foot?
B Which is longer, a ribbon 2 yards long or a ribbon 5 feet long?
C Which is less, 5 quarts of milk or 1 gallon of milk?
D Are 2 pints plus 1 pint more than or less than 1 quart?

E Which weighs more, a pound of candy or 10 ounces of candy?
F Which is less, a yard of ribbon or 39 inches of ribbon?
G Are 12 ounces plus 8 ounces more than or less than 1 pound?
H Are 15 inches plus 15 inches more than or less than 1 yard?

A 52 can be 4 tens ▭ ones.
B 70 can be ▭ tens 10 ones.
C 90 can be 8 tens ▭ ones.
D 27 can be ▭ ten 17 ones.
E 238 can be 1 hundred ▭ tens 8 ones.
F 238 can be 2 hundreds 2 tens ▭ ones.

A $73 + 68 = ▭$
B $45 + 55 = ▭$
C $58 + 7 = ▭$
D $36 + 19 + 42 = ▭$
E $27 + 50 + 91 = ▭$
F $403 + 529 = ▭$
G $768 + 32 = ▭$
H $225 + 695 + 238 = ▭$
I $301 + 495 = ▭$
J $536 + 84 + 90 = ▭$
K $204 + 458 + 676 = ▭$
L $86 + 432 + 121 = ▭$
M $890 + 492 = ▭$
N $571 + 294 + 407 = ▭$
O $825 + 483 = ▭$

Checking up

The work on this page will help you check up on subtraction.

A

B

A Seven boys have been playing ball. Two boys have to go home now. How many boys will be left to play ball?

$7 - 2 =$ ▒

B Eleven girls are having a picnic. Seven girls brought the sandwiches, and the others brought apples. How many girls brought apples?

$11 - 7 =$ ▒

Test 1

A	$10 - 8 =$ ▒	L	$9 - 3 =$ ▒
B	$6 - 1 =$ ▒	M	$5 - 4 =$ ▒
C	$8 - 4 =$ ▒	N	$10 - 7 =$ ▒
D	$7 - 5 =$ ▒	O	$6 - 4 =$ ▒
E	$4 - 3 =$ ▒	P	$9 - 5 =$ ▒
F	$9 - 4 =$ ▒	Q	$3 - 2 =$ ▒
G	$5 - 2 =$ ▒	R	$8 - 3 =$ ▒
H	$10 - 5 =$ ▒	S	$7 - 6 =$ ▒
I	$3 - 1 =$ ▒	T	$10 - 4 =$ ▒
J	$6 - 3 =$ ▒	U	$9 - 7 =$ ▒
K	$8 - 2 =$ ▒	V	$9 - 1 =$ ▒

Test 2

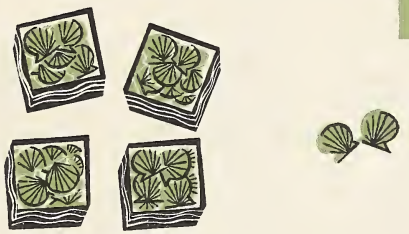
A	$13 - 4 =$ ▒	L	$16 - 7 =$ ▒
B	$17 - 9 =$ ▒	M	$15 - 8 =$ ▒
C	$12 - 7 =$ ▒	N	$11 - 8 =$ ▒
D	$14 - 8 =$ ▒	O	$12 - 8 =$ ▒
E	$11 - 2 =$ ▒	P	$12 - 6 =$ ▒
F	$15 - 7 =$ ▒	Q	$17 - 8 =$ ▒
G	$18 - 9 =$ ▒	R	$13 - 7 =$ ▒
H	$16 - 8 =$ ▒	S	$12 - 9 =$ ▒
I	$12 - 3 =$ ▒	T	$11 - 4 =$ ▒
J	$14 - 7 =$ ▒	U	$14 - 5 =$ ▒
K	$13 - 5 =$ ▒	V	$15 - 9 =$ ▒

Learning how

This lesson will help you remember how to subtract numbers of two figures.

see

A



Bill found 42 shells. He is giving 27 of them to Tom. How many shells will he have left?

$42 - 27 = \square$ ← You must find this number.

B

← Before you can take away 7 shells, you must empty one box of 10.

Before you can subtract 7 ones, you must have more ones. Take one of the tens and put it with the 2 ones.

$$\begin{array}{r} 4\,2 \\ 2\,7 \\ \hline \end{array}$$

C

← Now you have 3 boxes of 10 shells and also 12 shells.

$$\begin{array}{r} 3\,12 \\ 4\,2 \\ 2\,7 \\ \hline \end{array}$$

← Now you have 3 tens and 12 ones.

D

← Take away 7 shells.

$$\begin{array}{r} 3\,12 \\ 4\,2 \\ 2\,7 \\ \hline 5 \end{array}$$

Subtract 7 ones from 12 ones. There are 5 ones left.

To show that there will be 5 ones in the answer, write 5 here. ←

Next take away 2 boxes of 10 shells.

E

Subtract 2 tens from 3 tens.
1 ten is left.

$$\begin{array}{r} {}^{3}\,{}^{12} \\ 4\,2 \\ 2\,7 \\ \hline 1\,5 \end{array}$$

Write 1 here to show 1 ten in the answer.

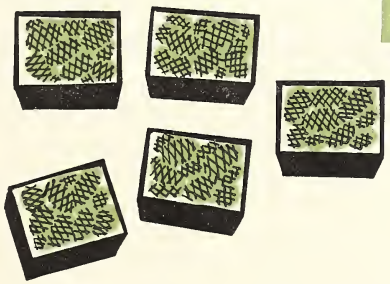
F

Bill will have 15 shells left.

$42 - 27 = 15$

---

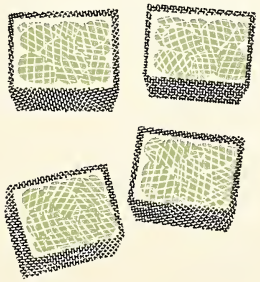
think



A

Carol and Mary together have 50 pine cones. 29 of them are Carol's. How many of the cones are Mary's?

$50 - 29 = \square$ You must find this number.



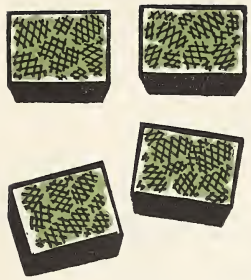
B

Why must you empty 1 box of 10 cones before you can take away 9 cones?

What must you do before you can subtract 9 ones?

$$\begin{array}{r} 5\,0 \\ 2\,9 \\ \hline \end{array}$$

Now turn the page.

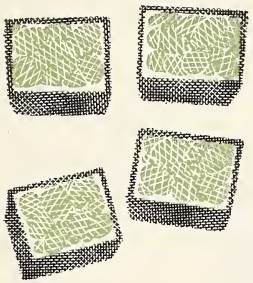


C

How many boxes of 10 cones are there? How many single cones are there?

4 10 ← Now you have ▤ tens and ▤ ones.

5 Ø
2 9



D

How many of the 10 cones should you take away? How many are left?

Subtract 9 ones from ▤ ones.

4 10
5 Ø
2 9
1

What does this 1 show?

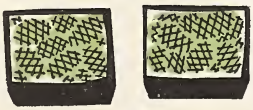
E

How many boxes of 10 cones should you take away?

Now subtract ▤ tens from ▤ tens.

4 10
5 Ø
2 9
2 1

What does this 2 show?



F

Mary has ▤ pine cones.

50 − 29 = 21

try

A Bob found 24 stones. He took 18 of them to science class and kept the others at home. How many stones did he keep at home?

$24 - 18 =$ ▭

$$\begin{array}{r} {\scriptstyle 1\ 14} \\ 24 \\ -\ 18 \\ \hline 6 \end{array}$$ ← Either remember these figures or write them.

B $39 - 17 =$ ▭

$$\begin{array}{r} 39 \\ -\ 17 \\ \hline 22 \end{array}$$

C $82 - 36 =$ ▭

$$\begin{array}{r} 82 \\ -\ 36 \\ \hline 46 \end{array}$$

D $60 - 42 =$ ▭

$$\begin{array}{r} 60 \\ -\ 42 \\ \hline 18 \end{array}$$

E $55 - 25 =$ ▭

$$\begin{array}{r} 55 \\ -\ 25 \\ \hline 30 \end{array}$$

do

A The children drew 71 pictures of the plants and animals they saw in the woods. They put 35 of the pictures in a book. How many pictures were left over?

$71 - 35 =$ ▭

B Ann found 54 nuts in the woods. She took 20 nuts to school and kept the others. How many did Ann keep?

$54 - 20 =$ ▭

C The science class had 40 pine cones. Sixteen cones were large, and the rest were small. How many small cones did the class have?

$40 - 16 =$ ▭

D There were 98 sheets of drawing paper when the children began to draw. The children used 75 sheets. How many sheets were left?

$98 - 75 =$ ▭

E $75 - 67 =$ ▭
F $96 - 52 =$ ▭
G $41 - 18 =$ ▭
H $65 - 20 =$ ▭
I $73 - 43 =$ ▭
J $90 - 24 =$ ▭
K $27 - 19 =$ ▭
L $87 - 43 =$ ▭

M $67 - 32 =$ ▭
N $84 - 9 =$ ▭
O $70 - 35 =$ ▭
P $91 - 8 =$ ▭
Q $50 - 37 =$ ▭
R $66 - 25 =$ ▭
S $73 - 31 =$ ▭
T $52 - 34 =$ ▭

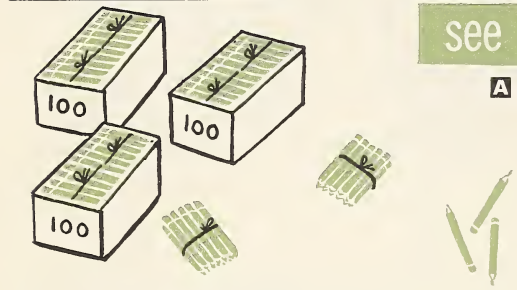
A $87 - 37 =$ ▭
B $46 - 29 =$ ▭
C $63 - 55 =$ ▭
D $86 - 51 =$ ▭
E $44 - 37 =$ ▭
F $71 - 64 =$ ▭
G $98 - 49 =$ ▭
H $37 - 18 =$ ▭

I $80 - 28 =$ ▭
J $69 - 40 =$ ▭
K $74 - 46 =$ ▭
L $35 - 15 =$ ▭
M $90 - 46 =$ ▭
N $42 - 19 =$ ▭
O $80 - 71 =$ ▭
P $68 - 28 =$ ▭

Now you can subtract numbers of two figures.

Learning how

This lesson will help you remember how to subtract numbers that have three figures.

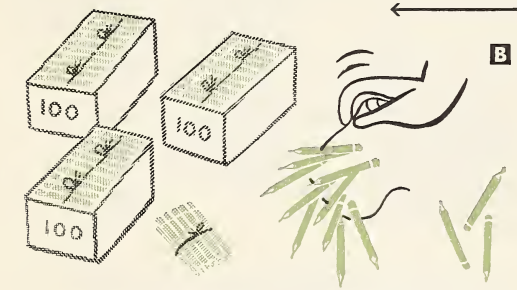


see

A

The fourth graders found 323 pencils in their cupboard. They are giving 158 of them to the third grade. How many pencils will be left?

$323 - 158 = \square$ ← You must find this number.

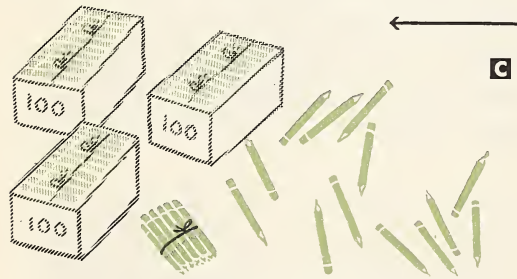


B

← Before you can take away 8 pencils, you must open one of the bundles of 10 pencils.

$$\begin{array}{r} 323 \\ 158 \\ \hline \end{array}$$

← Before you can subtract 8 ones, you must have more ones. Take one of the tens and put it with the 3 ones.

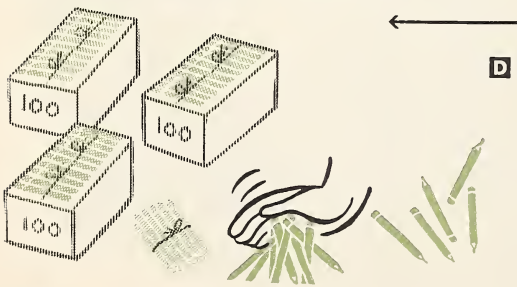


C

← Now you have 1 bundle of 10 pencils and also 13 pencils.

$$\begin{array}{r} {\scriptstyle 1\ 13} \\ 32\not{3} \\ 158 \\ \hline \end{array}$$

← Now you have 1 ten and 13 ones.



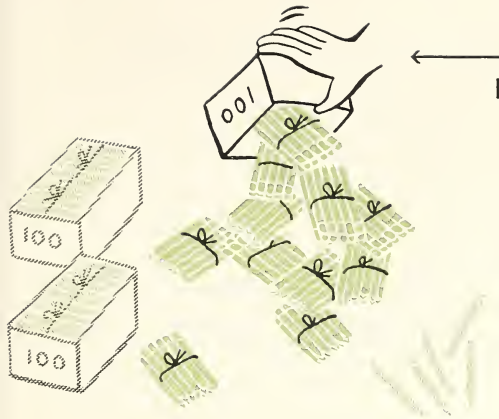
D

← Take away 8 pencils.

$$\begin{array}{r} {\scriptstyle 1\ 13} \\ 32\not{3} \\ 158 \\ \hline 5 \end{array}$$

← Subtract 8 ones from 13 ones. There are 5 ones left.

← Write 5 here to show there will be 5 ones in the answer.

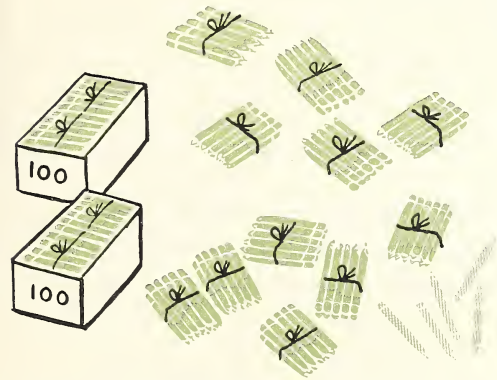


E Before you can take away 5 bundles of 10, or 50 pencils, you must empty one of the boxes of 100.

Before you can subtract 5 tens, you must have more tens. Take one of the hundreds and think of it as 10 tens.

$$\begin{array}{r} {\scriptstyle 1}\,{\scriptstyle 13} \\ 3\not{2}\not{3} \\ 158 \\ \hline 5 \end{array}$$

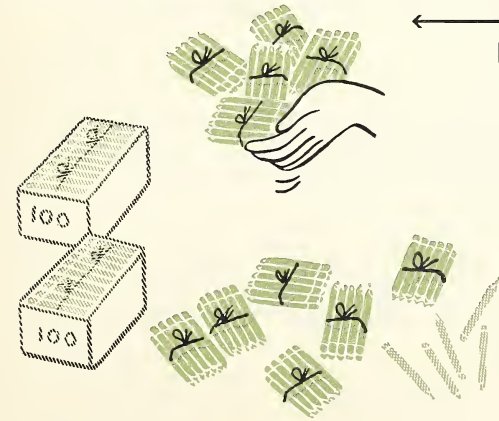
F Now you have 2 boxes of 100 and you have 11 bundles of 10.



$$\begin{array}{r} 2\,11\,{\scriptstyle 13} \\ 3\not{2}\not{3} \\ 158 \\ \hline 5 \end{array}$$

Now you have 2 hundreds and 11 tens.

G Take away 5 bundles of 10 pencils.



Subtract 5 tens from 11 tens. There are 6 tens left.

$$\begin{array}{r} 2\,11\,{\scriptstyle 13} \\ 3\not{2}\not{3} \\ 158 \\ \hline 65 \end{array}$$

Write 6 here to show there are 6 tens in the answer.

Now turn the page.

Now take away a box of 100 pencils.

H

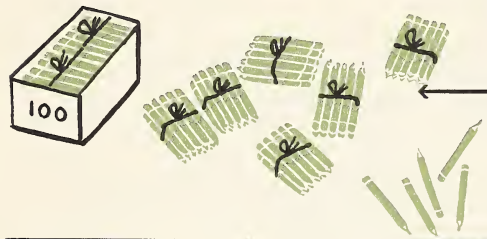
2 11 13
3 2 3
1 5 8

Subtract 1 hundred from 2 hundreds. There is 1 hundred left.

1 6 5

Write 1 here to show 1 hundred in the answer.

I

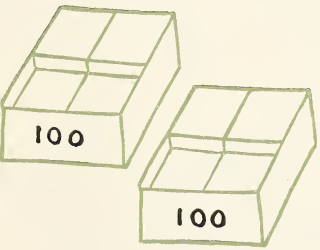


165 pencils are left.

$323 - 158 = 165$

---

think

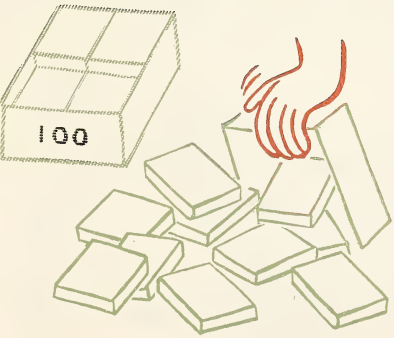


A

There were 201 erasers in the school storeroom. The children have bought 64 erasers. How many erasers are left?

$201 - 64 = \square$

You must find this number.

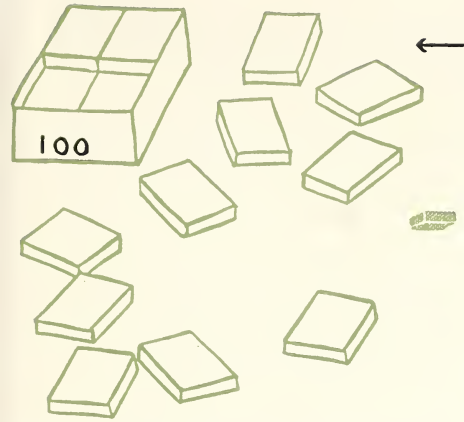


B

Why must you open one of the boxes of 100 erasers before you can take away 4 erasers?

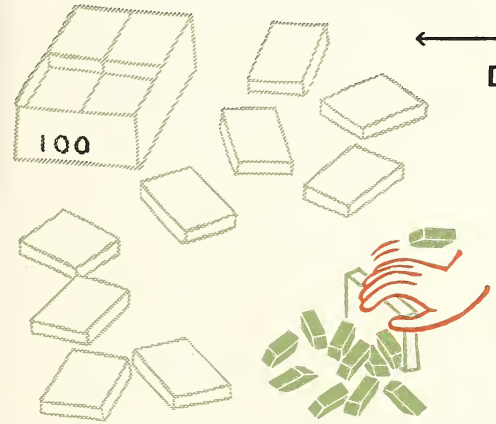
2 0 1
6 4

What must you do before you can take away 4 ones?



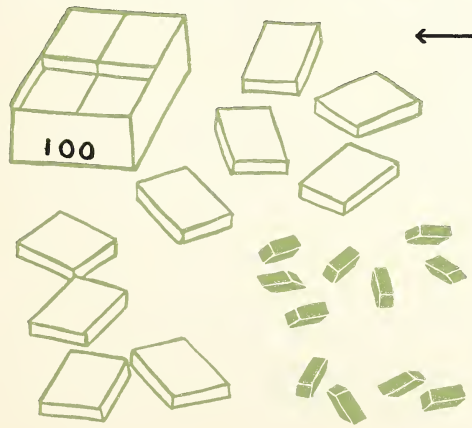
C Now you have 1 box of 100 erasers and ▒ boxes of 10 erasers.

1 10 ← You have ▒ hundred and ▒ tens.
2 0 1
6 4



D Why must you now open another box of erasers, a box of 10?

1 10 ← You still need more ones. Where will you get them?
2 0 1
6 4



E How many boxes of 100 are there now?
How many boxes of 10 are there?
How many single erasers are there?

9
1 ~~10~~ 11 ← You now have 1 hundred, ▒ tens, and ▒ ones.
2 0 1
6 4

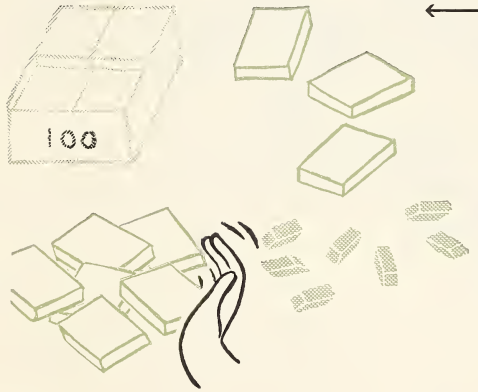
Now turn the page.

How many of the 11 erasers should you take away? How many are left?

F

9 ← Subtract 4 ones from ▤ ones.

1 10 11
2 0 1
− 6 4
7 ← What does the 7 stand for?

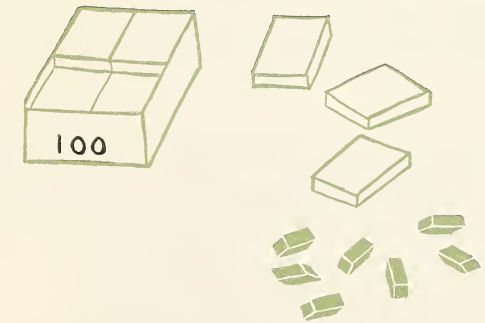


How many boxes of 10 erasers should you take away?

G

↓ Now subtract 6 tens from ▤ tens.

9
1 10 11
2 0 1
− 6 4
3 7
↑ What does the 3 stand for?



Do you need to take away any more erasers? How do you know?

H

9
1 10 11
2 0 1
− 6 4
1 3 7

Are there any hundreds to subtract?

↑ Why do you write this 1?

There are ▤ erasers left.

201 − 64 = ▤

try

A There were 190 books about plants and animals in the school library. The fourth graders read 143 of them. They read all but how many of these books?

190 − 143 = ▒

$$\begin{array}{r} {\scriptstyle 8\ 10} \\ 1\not{9}\not{0} \\ 143 \\ \hline 47 \end{array}$$

← Either remember these figures or write them.

B 288 − 134 = ▒

$$\begin{array}{r} 288 \\ 134 \\ \hline 154 \end{array}$$

C 300 − 65 = ▒

$$\begin{array}{r} 300 \\ 65 \\ \hline 235 \end{array}$$

D 903 − 476 = ▒

$$\begin{array}{r} 903 \\ 476 \\ \hline 427 \end{array}$$

E 964 − 920 = ▒

$$\begin{array}{r} 964 \\ 920 \\ \hline 44 \end{array}$$

do

A There were 600 sheets of drawing paper in the cupboard. Mary took out 56 sheets. How many sheets were left?

600 − 56 = ▒

B The children in the science class collected 173 pictures. 138 of them were pictures of animals. The others were pictures of plants. There were how many pictures of plants?

173 − 138 = ▒

C 864 − 224 = ▒
D 427 − 257 = ▒
E 620 − 543 = ▒
F 500 − 329 = ▒
G 275 − 32 = ▒
H 896 − 51 = ▒
I 754 − 350 = ▒
J 523 − 472 = ▒
K 392 − 89 = ▒
L 657 − 284 = ▒
M 537 − 48 = ▒

N 285 − 196 = ▒
O 879 − 326 = ▒
P 775 − 738 = ▒
Q 804 − 147 = ▒
R 569 − 137 = ▒
S 800 − 445 = ▒
T 675 − 49 = ▒
U 403 − 207 = ▒
V 320 − 164 = ▒
W 904 − 875 = ▒
X 436 − 27 = ▒

A 646 − 189 = ▒
B 748 − 339 = ▒
C 576 − 408 = ▒
D 530 − 71 = ▒
E 349 − 62 = ▒
F 700 − 292 = ▒
G 428 − 75 = ▒
H 193 − 86 = ▒
I 501 − 329 = ▒
J 698 − 237 = ▒
K 703 − 627 = ▒

Now you should be able to subtract numbers with three figures in them.

Using arithmetic

A

B

A There were 8 pieces of candy on a plate. Carol took 3 pieces and left the rest for her brother. How many pieces did she leave for her brother?
$8 - 3 = \square$

B Carol's mother made 12 cupcakes. She put frosting on 6 cupcakes and left the rest plain. How many cupcakes did Carol's mother leave plain?
$12 - 6 = \square$

C Carol picked 15 flowers in her garden. Nine flowers were open. How many flowers were not open?
$15 - 9 = \square$

D Peggy had 17 pictures of cats. She gave 5 of them to Carol. Then Peggy had how many pictures of cats?
$17 - 5 = \square$

E Carol and Don raked 10 baskets of leaves. They helped their father burn 3 baskets of leaves. They put the rest on the flower beds.
How many baskets of leaves did they put on the flower beds?
$\square - \square = \square$

F Don helped his father take down 28 screens. Don took down 6 of them. How many screens were left for his father to take down?
$\square - \square = \square$

G Don and his father painted 22 screens. His father painted 17 of them. How many did Don paint?
$\square - \square = \square$

H Don took a bag of 85 marbles to school. He lost 17 marbles in the school yard. Then he had how many marbles?

I The fourth graders bought 36 bottles of chocolate milk. They drank 28 bottles of it. How many bottles of chocolate milk were left?

J Betty and Carol made 20 place cards for a party. Carol made 11 of them. How many place cards did Betty make?

K The girls put little shells on the place cards. They had 91 shells. They used 63 shells. How many shells were left over?

L Carol painted 23 pine cones. She painted 15 of them blue and the rest of them red. How many pine cones did she paint red?

M Nancy picked 30 flowers in her garden. She put 12 flowers in a vase and took the rest to school. How many flowers did she take to school?

N Nancy and Peggy made 24 cookies. They gave their mother 16 cookies and kept the rest. How many cookies did they keep?

O Bill had 33 picture cards. Fifteen of them were baseball cards. The rest were football cards. He had how many football cards?

P Bill gave 14 of his 33 cards to Don. How many cards did he keep?

Q Betty had a new box of 24 crayons. She lost 5 of them. Then how many crayons did she have in her box?

R Bill had 22 snails. He sold 8 snails to Tom. How many snails did Bill have then?

S Bill had 31 goldfish also. Eighteen of them were large. The others were small. How many small goldfish did Bill have?

T Tom bought 6 of Bill's 31 goldfish. How many goldfish did Bill have then?

U There are 54 pages in Dick's new book. It took him 2 days to read the book. He said he read 26 pages the first day. How many pages did he read the second day?

Checking up

A $51 - 38 =$ ▒
B $98 - 94 =$ ▒
C $70 - 42 =$ ▒
D $68 - 25 =$ ▒
E $53 - 49 =$ ▒
F $86 - 26 =$ ▒
G $40 - 17 =$ ▒
H $542 - 236 =$ ▒
I $820 - 409 =$ ▒
J $934 - 375 =$ ▒
K $795 - 130 =$ ▒
L $601 - 75 =$ ▒
M $805 - 329 =$ ▒
N $500 - 348 =$ ▒
O $200 - 193 =$ ▒
P $362 - 58 =$ ▒
Q $100 - 51 =$ ▒
R $806 - 799 =$ ▒

Using arithmetic

A

B

A The science class had 3 turtles. Tom brought 2 more turtles to class. How many turtles did the class have then?

3 ~~~ 2 = ▒

B The class had 10 plants on a table. Mary is going to put 3 of the plants in the window. How many plants will be left on the table?

10 ~~~ 3 = ▒

C Four of the 10 plants had flowers on them. How many of the plants did not have flowers?

10 ~~~ 4 = ▒

D Don brought 18 colored stones to class. Bill brought 9 stones. The two boys brought how many stones in all?

18 ~~~ 9 = ▒

E Betty planted 20 bean seeds in a box. Six of the seeds came up. How many of the seeds did not come up?

20 ~~~ 6 = ▒

F Nancy had 17 shells. Carol gave her 4 more shells. How many shells did Nancy have then?

17 ~~~ 4 = ▒

G Bob had 19 pictures of birds. Tom gave him 3 more pictures of birds. Then Bob had how many pictures of birds?

19 ~~~ 3 = ▒

H The class had 7 white mice. Bill bought 2 of them to take home. How many white mice did the class have then?

7 ~~~ 2 = ▒

I Ann had 6 fish at home. She brought 2 of them to class. Then how many fish did she have at home?

J The class had 6 snails. Bob brought 2 more snails to class. Then how many snails did the class have?

K Tom had 14 pictures of butterflies at home and 8 pictures of butterflies at school. He had how many pictures of butterflies in all?

L Ann picked 30 colored leaves. She gave 5 of them to Nancy. Then she had how many colored leaves?

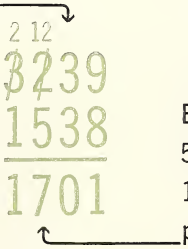
M The class collected 13 moths and 7 butterflies. The class had how many moths and butterflies in all?

N Carol planted some flower seeds. 6 of the 15 plants that came up had blue flowers. The others had red flowers. How many had red flowers?

Keeping skillful

Subtract numbers that have four figures just as you subtract numbers that have three figures.
3239 − 1538 = ▒

Why do you put a 0 in tens' place in the answer?



Before you can subtract 5 hundreds, you have to take 1 of the 3 thousands and put it with the 2 hundreds.

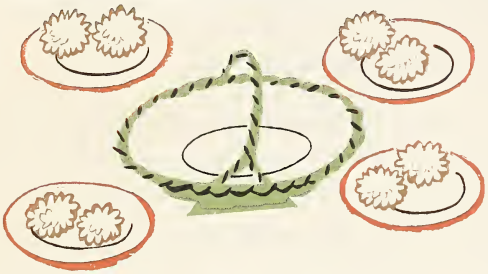
A 3406 − 2098 = ▒
B 536 − 290 = ▒
C 300 − 142 = ▒
D 5208 − 3768 = ▒
E 708 − 625 = ▒
F 1826 − 755 = ▒
G 842 − 237 = ▒
H 5934 − 1879 = ▒
I 962 − 308 = ▒

A 48 + 22 + 61 = ▒
B 417 + 138 + 502 = ▒
C 634 + 807 = ▒
D 28 + 17 + 58 = ▒
E 987 + 638 = ▒
F 634 + 727 = ▒
G 783 + 214 + 695 = ▒
H 35 + 19 + 40 = ▒
I 268 + 712 + 455 = ▒

A 53 + 25 + 71 = ▒
B 1932 − 1659 = ▒
C 116 + 429 + 270 = ▒
D 417 − 328 = ▒
E 70 − 49 = ▒
F 987 + 65 + 138 = ▒
G 921 − 518 = ▒
H 389 + 156 + 420 = ▒
I 2362 − 1817 = ▒

Looking back

This lesson will help you remember what multiplication means and how to multiply to get numbers like 8, 10, 12, 15, and 18.



There were 2 popcorn balls on each of 4 plates. Ann put the popcorn balls in a basket to take to a party at school. She took how many popcorn balls to the party?

4 groups of 2 = ▒

4 twos = ▒ 4 times 2 = ▒

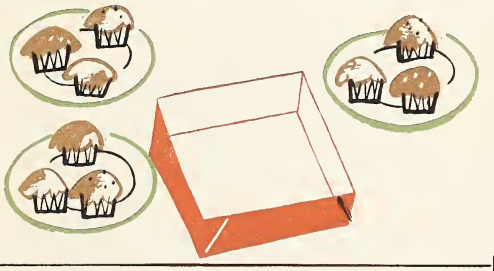
2 multiplied by 4 = ▒

Multiply 2 by 4. $4 \times 2 =$ ▒

Multiply

$$\begin{array}{r} 2 \\ \times\ 4 \\ \hline \blacksquare \end{array}$$

A



There were 3 cupcakes on each of 3 plates. Betty put the cupcakes into a box to take them to the party at school. How many cupcakes did she take to the party?

3 groups of 3 = ▒

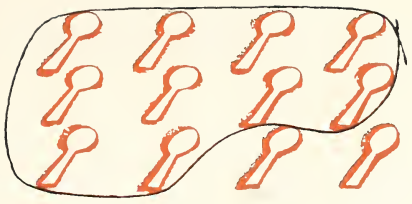
3 threes = ▒ 3 times 3 = ▒

3 multiplied by 3 = ▒

Multiply 3 by 3. $3 \times 3 =$ ▒

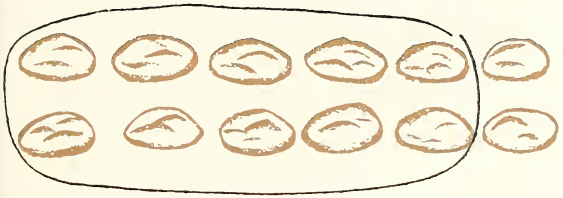
B

A	$5 \times 2 =$ ▒	E	$3 \times 2 =$ ▒
B	$2 \times 3 =$ ▒	F	$2 \times 2 =$ ▒
C	$3 \times 3 =$ ▒	G	$2 \times 4 =$ ▒
D	$4 \times 2 =$ ▒	H	$2 \times 5 =$ ▒



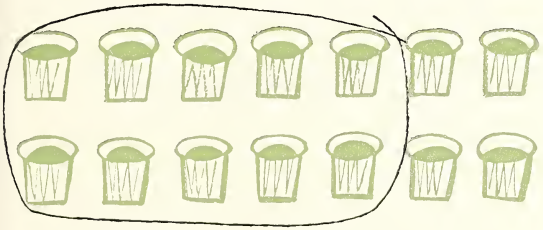
C

There are ▒ rows of 4 spoons.
3 fours = ▒
3 × 4 = ▒
There are ▒ rows of 3 spoons.
4 threes = ▒
4 × 3 = ▒



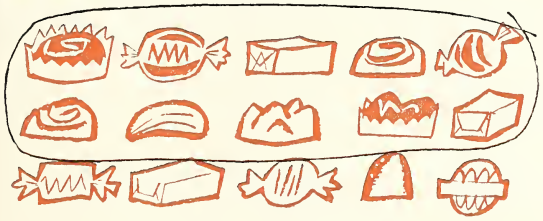
D

There are ▒ rows of 6 cookies.
2 sixes = ▒
2 × 6 = ▒
There are ▒ rows of 2 cookies.
6 twos = ▒
6 × 2 = ▒



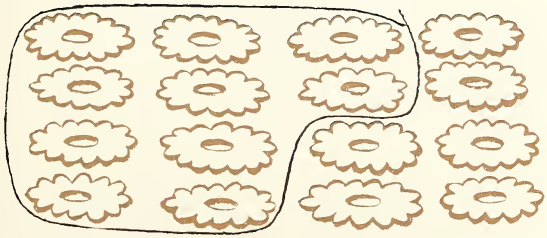
E

There are ▒ rows of 7 cups.
2 sevens = ▒
2 × 7 = ▒
There are ▒ rows of 2 cups.
7 twos = ▒
7 × 2 = ▒



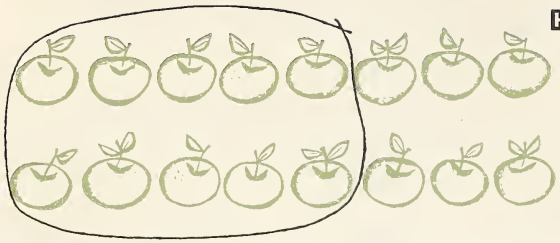
F

There are ▒ rows of 5 candies.
3 fives = ▒
3 × 5 = ▒
There are ▒ rows of 3 candies.
5 threes = ▒
5 × 3 = ▒



G

There are ▒ rows of 4 cookies.
4 fours = ▒
4 × 4 = ▒

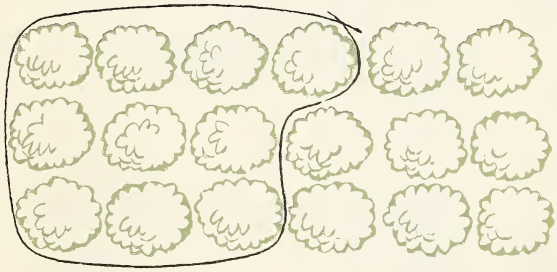


H There are ▭ rows of 8 apples.
2 eights = ▭
2 × 8 = ▭

There are ▭ rows of 2 apples.
8 twos = ▭
8 × 2 = ▭

I There are ▭ rows of 9 candies.
2 nines = ▭
2 × 9 = ▭

There are ▭ rows of 2 candies.
9 twos = ▭
9 × 2 = ▭



J There are ▭ rows of 6 popcorn balls.
3 sixes = ▭
3 × 6 = ▭

There are ▭ rows of 3 popcorn balls.
6 threes = ▭
6 × 3 = ▭

A 4 × 4 = ▭	F 2 × 8 = ▭	K 6 × 3 = ▭
B 6 × 2 = ▭	G 7 × 2 = ▭	L 8 × 2 = ▭
C 3 × 5 = ▭	H 3 × 6 = ▭	M 4 × 3 = ▭
D 9 × 2 = ▭	I 2 × 7 = ▭	N 2 × 6 = ▭
E 3 × 4 = ▭	J 2 × 9 = ▭	O 5 × 3 = ▭

Multiply

A	B	C	D	E
7	2	6	4	5
2	9	3	4	3
▭	▭	▭	▭	▭

Now you should be able to multiply to get the numbers from 4 to 18.

Looking back

This lesson will help you remember how to multiply to get numbers from 20 to 36.

A

There are 4 rows of 5 cupcakes.
4 fives = ▒
4 × 5 = ▒

There are 5 rows of 4 cupcakes.
5 fours = ▒
5 × 4 = ▒

B

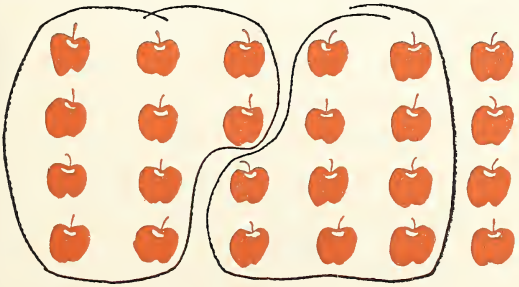
There are ▒ rows of 7 cookies.
3 sevens = ▒
3 × 7 = ▒

There are ▒ rows of 3 cookies.
7 threes = ▒
7 × 3 = ▒

C

There are ▒ rows of 8 candies.
3 eights = ▒
3 × 8 = ▒

There are ▒ rows of 3 candies.
8 threes = ▒
8 × 3 = ▒



D

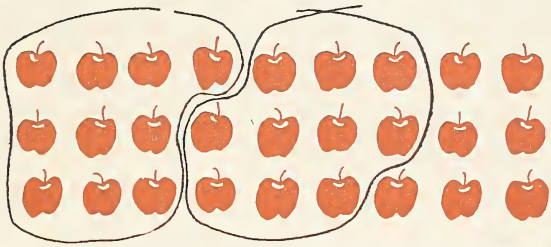
There are ▒ rows of 6 apples.
4 sixes = ▒
4 × 6 = ▒

There are ▒ rows of 4 apples.
6 fours = ▒
6 × 4 = ▒

E There are ▒ rows of 5 candy sticks.

5 fives = ▒

5 × 5 = ▒



F There are ▒ rows of 9 apples.

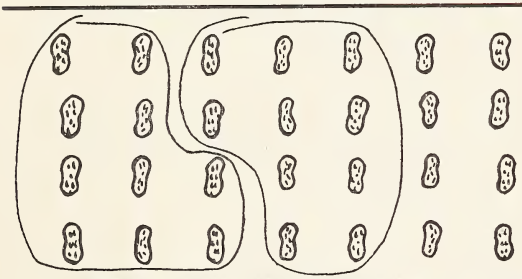
3 nines = ▒

3 × 9 = ▒

There are ▒ rows of 3 apples.

9 threes = ▒

9 × 3 = ▒



G There are ▒ rows of 7 peanuts.

4 sevens = ▒

4 × 7 = ▒

There are ▒ rows of 4 peanuts.

7 fours = ▒

7 × 4 = ▒

H There are ▒ rows of 6 candies.

5 sixes = ▒

5 × 6 = ▒

There are ▒ rows of 5 candies.

6 fives = ▒

6 × 5 = ▒

I There are ▒ rows of 8 cupcakes.

4 eights = ▒

4 × 8 = ▒

There are ▒ rows of 4 cupcakes.

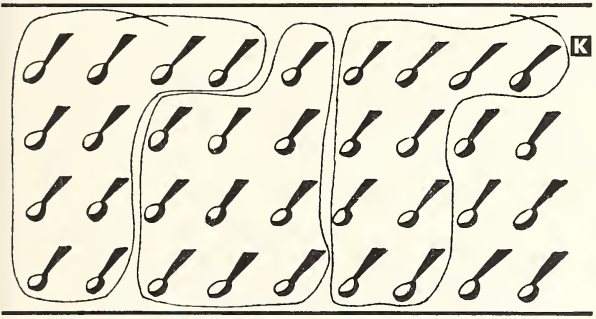
8 fours = ▒

8 × 4 = ▒

J

There are ▒ rows of 7 candies.
5 sevens = ▒
5 × 7 = ▒

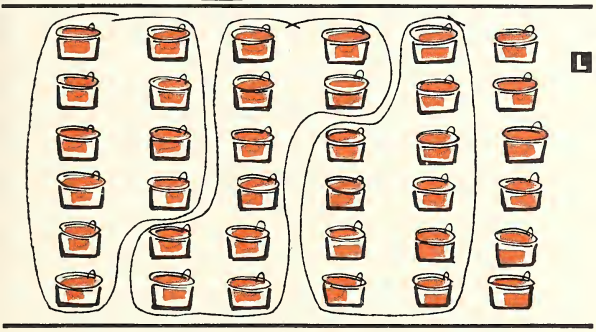
There are ▒ rows of 5 candies.
7 fives = ▒
7 × 5 = ▒



K

There are ▒ rows of 9 spoons.
4 nines = ▒
4 × 9 = ▒

There are ▒ rows of 4 spoons.
9 fours = ▒
9 × 4 = ▒



L

There are ▒ rows of 6 cups.
6 sixes = ▒
6 × 6 = ▒

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A 8 × 3 = ▒
B 5 × 4 = ▒
C 3 × 9 = ▒
D 4 × 7 = ▒
E 8 × 4 = ▒
F 5 × 6 = ▒
G 3 × 7 = ▒
H 7 × 5 = ▒

I 6 × 6 = ▒
J 4 × 6 = ▒
K 9 × 4 = ▒
L 5 × 5 = ▒
M 3 × 8 = ▒
N 9 × 3 = ▒
O 4 × 8 = ▒
P 6 × 5 = ▒

Q 7 × 4 = ▒
R 4 × 5 = ▒
S 5 × 7 = ▒
T 7 × 3 = ▒
U 4 × 9 = ▒
V 6 × 4 = ▒

A 6 × 6 = ▒
B 5 × 7 = ▒
C 9 × 4 = ▒
D 6 × 5 = ▒
E 4 × 6 = ▒
F 5 × 5 = ▒
G 8 × 4 = ▒
H 4 × 7 = ▒

Now you should know how to multiply to get the numbers from 20 to 36.

Using arithmetic

A

B

A Four groups of 2 children played a game at a school party. How many children in all were in this game?
$4 \times 2 = \square$

B Ann opened 4 packages of paper plates for the party. There were 8 plates in each package. There were how many plates in all?
$4 \times 8 = \square$

C Ann also opened 6 packages of paper cups. There were 6 cups in each package. How many cups in all were in the packages?
$6 \times 6 = \square$

D Mrs. Brown cut a cake so that there were 3 rows of pieces and 8 pieces in each row. She cut the cake into how many pieces?
$3 \times 8 = \square$

E Nancy, Carol, and Sue brought 6 cupcakes each to the party. They brought how many cupcakes in all?
$\square \times \square = \square$

F The class had a race. There were 3 teams of players and 9 players on each team. How many children were in the race?
$\square \times \square = \square$

G Mary said that she made 2 party hats each day last week. How many party hats in all did she make last week?
THINK 1 week is how many days?
$\square \times \square = \square$

H Five children brought apples to the party. Each child brought 4 apples. How many apples in all did these children bring to the party?
$\square \times \square = \square$

I At the school party, there were just enough boys to make 2 teams of 9 each for baseball. How many boys were at the party?

J Four children brought balloons to the party. Each child brought 9 balloons. How many balloons in all did the children bring?

K There were 5 rows of milk bottles on a table. Each row had 7 bottles of milk in it. How many bottles of milk were on the table?

L The children drew pictures to put on 3 walls of their classroom. They drew 7 pictures for each wall. In all, how many pictures did they draw?

M Mary brought cookies and put them on 4 plates. She put 6 cookies on each plate. How many cookies had she brought?

N Jack brought 3 boxes of games. There were 4 games in each box. How many games did he bring?

O After the party, Ann collected empty plates from 4 tables. She got 7 plates from each table. How many plates did she collect altogether?

P Five cars came to take the children home. Jim counted all the children and said, "If each car can take 6 children, we can all ride." How many children did Jim count?

Checking up

Test 1	Test 2	Test 3	Test 4
A $4 \times 3 =$ ▒	A $2 \times 9 =$ ▒	A $4 \times 5 =$ ▒	A $6 \times 6 =$ ▒
B $3 \times 2 =$ ▒	B $3 \times 5 =$ ▒	B $6 \times 4 =$ ▒	B $7 \times 4 =$ ▒
C $2 \times 5 =$ ▒	C $6 \times 3 =$ ▒	C $7 \times 3 =$ ▒	C $5 \times 6 =$ ▒
D $2 \times 2 =$ ▒	D $2 \times 7 =$ ▒	D $5 \times 5 =$ ▒	D $3 \times 9 =$ ▒
E $6 \times 2 =$ ▒	E $4 \times 4 =$ ▒	E $4 \times 6 =$ ▒	E $8 \times 4 =$ ▒
F $3 \times 3 =$ ▒	F $7 \times 2 =$ ▒	F $5 \times 4 =$ ▒	F $4 \times 9 =$ ▒
G $2 \times 3 =$ ▒	G $9 \times 2 =$ ▒	G $8 \times 3 =$ ▒	G $6 \times 5 =$ ▒
H $4 \times 2 =$ ▒	H $5 \times 3 =$ ▒	H $3 \times 7 =$ ▒	H $9 \times 4 =$ ▒
I $3 \times 4 =$ ▒	I $8 \times 2 =$ ▒	I $9 \times 3 =$ ▒	I $5 \times 7 =$ ▒
J $2 \times 6 =$ ▒	J $3 \times 6 =$ ▒	J $6 \times 3 =$ ▒	J $4 \times 8 =$ ▒
K $2 \times 4 =$ ▒	K $2 \times 8 =$ ▒	K $3 \times 9 =$ ▒	K $7 \times 5 =$ ▒
L $5 \times 2 =$ ▒	L $3 \times 5 =$ ▒	L $3 \times 8 =$ ▒	L $4 \times 7 =$ ▒

Thinking straight

Sometimes you will need to subtract from such numbers as 6003 or 4008 or 7000. We will subtract 429 from 6003.

```
6003
 429
```

Before you can subtract 9 ones, you must have more ones. Where can you get more ones?

```
6003
 429
```

Think of 6003 as 600 tens 3 ones.

```
599 13
6003
 429
5574
```

Then take one of the 600 tens and put it with the ones. Now you have 599 tens and 13 ones. You are ready to subtract.

A 2004 = 200 tens 4 ones, or 199 tens ▭ ones
B 5007 = ▭ tens 7 ones, or 499 tens ▭ ones
C 3002 = 300 tens ▭ ones, or ▭ tens 12 ones
D 7000 = ▭ tens, or ▭ tens 10 ones
E 1005 = ▭ tens 5 ones, or ▭ tens 15 ones

A Subtract 268 from 2003.
B 4006 − 2527 = ▭
C 9000 − 4735 = ▭
D Subtract 389 from 5007.
E 8001 − 5695 = ▭
F 7000 − 6846 = ▭
G 8009 − 1469 = ▭

Keeping skillful

A Add 54 to 35.
B Subtract 12 from 37.
C Add 23 to 197.
D Subtract 43 from 150.
E Subtract 1695 from 2881.
F Add 316 to 508.
G Add 180 to 746.
H Subtract 205 from 741.
I Add 79 to 230.
J Subtract 310 from 436.
K Add 45 to 21.

A 26 + 35 + 47 = ▭
B 195 − 82 = ▭
C 504 + 68 = ▭
D 6700 − 4832 = ▭
E 530 + 267 = ▭
F 750 − 348 = ▭
G 608 + 327 + 491 = ▭
H 5002 − 3574 = ▭
I 41 + 73 + 58 = ▭
J 156 − 89 = ▭
K 533 + 164 + 703 = ▭

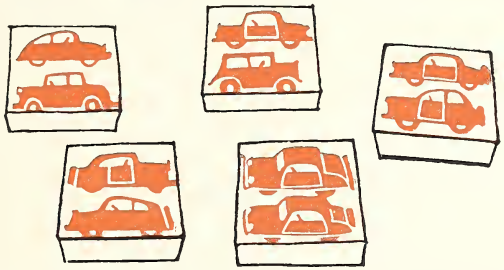
A 4 × 7 = ▭
B 6 × 3 = ▭
C 5 × 6 = ▭
D 3 × 8 = ▭
E 9 × 4 = ▭
F 6 × 6 = ▭
G 4 × 5 = ▭
H 5 × 7 = ▭
I 8 × 4 = ▭
J 7 × 3 = ▭
K 4 × 6 = ▭

Looking back

This lesson will help you remember what you learned last year about division and how to divide numbers from 4 to 18.

A

A clerk in a toy store is going to put 10 cars into boxes. He will put 2 cars into each box. How many groups of cars will he have? How many boxes will he need?

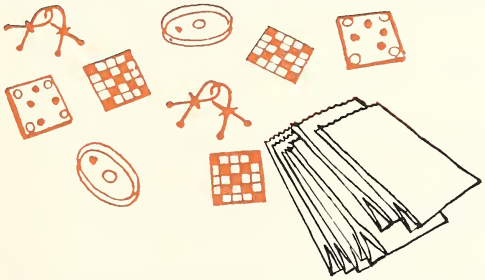


10 divided into groups of 2 makes ▭ groups.

10 divided by 2 = ▭

Divide 10 by 2. $10 \div 2 = \square$

$$2\overline{)10}$$



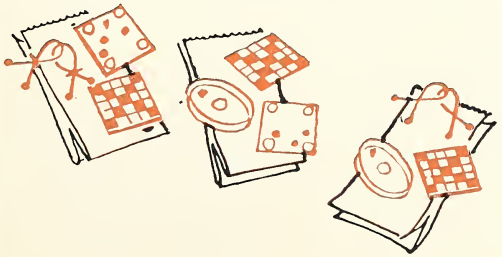
B

The clerk is also making surprise packages. He will put 3 puzzles into each bag. How many bags will he need for 9 puzzles?

9 divided into groups of 3 makes ▭ groups.

9 divided by 3 = ▭

Divide 9 by 3. $9 \div 3 = \square$



A $6 \div 2 = \square$

B $10 \div 5 = \square$

C $4 \div 2 = \square$

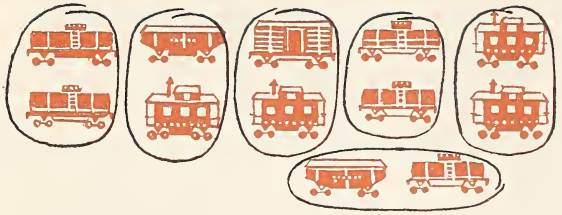
D $9 \div 3 = \square$

E $8 \div 4 = \square$

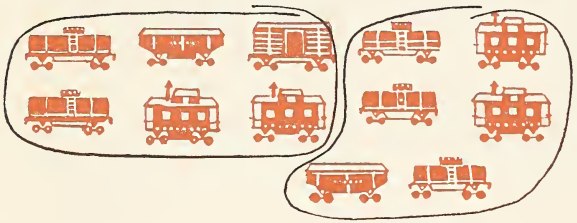
F $6 \div 3 = \square$

G $10 \div 2 = \square$

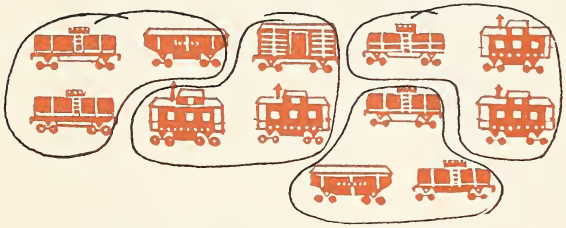
H $8 \div 2 = \square$



C There are 12 cars in all.
The 12 cars are divided into groups of ▒.
There are ▒ groups of 2.
12 ÷ 2 = ▒



D Now the 12 cars are divided into groups of ▒.
There are ▒ groups of 6.
12 ÷ 6 = ▒



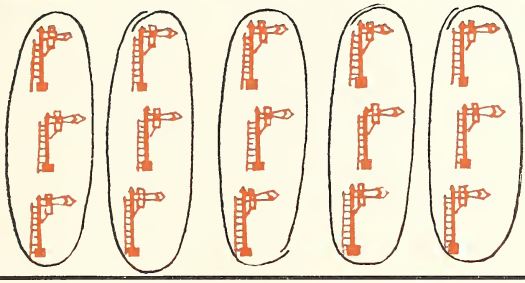
E Now the 12 cars are divided into groups of ▒.
There are ▒ groups of 3.
12 ÷ 3 = ▒

F Now the 12 cars are divided into groups of ▒.
There are ▒ groups of 4.
12 ÷ 4 = ▒

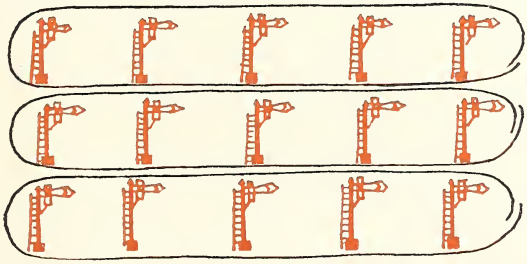
A 12 ÷ 4 = ▒
B 10 ÷ 2 = ▒
C 12 ÷ 2 = ▒
D 10 ÷ 5 = ▒
E 6 ÷ 3 = ▒
F 8 ÷ 4 = ▒
G 12 ÷ 6 = ▒
H 6 ÷ 2 = ▒
I 12 ÷ 3 = ▒
J 4 ÷ 2 = ▒
K 12 ÷ 6 = ▒
L 10 ÷ 2 = ▒
M 8 ÷ 4 = ▒
N 12 ÷ 4 = ▒
O 6 ÷ 3 = ▒
P Divide 8 by 2.
Q 9 divided by 3 = ▒
R 12 = ▒ groups of 6
S 10 = ▒ groups of 2
T Divide 12 by 4.

G There are 14 cars in all.
The 14 cars are divided into groups of ▒.
There are ▒ groups of 2.
14 ÷ 2 = ▒

H Now the 14 cars are divided into groups of ▒.
There are ▒ groups of 7.
14 ÷ 7 = ▒



I There are 15 signals in all.
The 15 signals are divided into groups of ▒.
There are ▒ groups of 3.
15 ÷ 3 = ▒



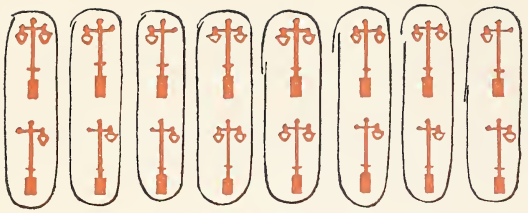
J Now the 15 signals are divided into groups of ▒.
There are ▒ groups of 5.
15 ÷ 5 = ▒

A 14 ÷ 7 = ▒
B 15 ÷ 3 = ▒
C 15 ÷ 5 = ▒
D 14 ÷ 2 = ▒
E 12 ÷ 4 = ▒

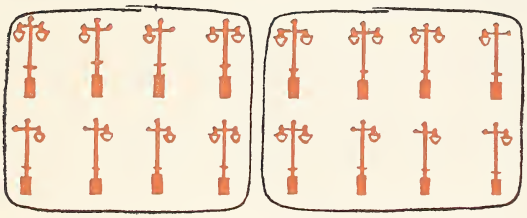
F 12 ÷ 2 = ▒
G 12 ÷ 6 = ▒
H 10 ÷ 2 = ▒
I 12 ÷ 3 = ▒
J 10 ÷ 5 = ▒

K 8 ÷ 4 = ▒
L 6 ÷ 2 = ▒
M 9 ÷ 3 = ▒
N 8 ÷ 2 = ▒
O 6 ÷ 3 = ▒

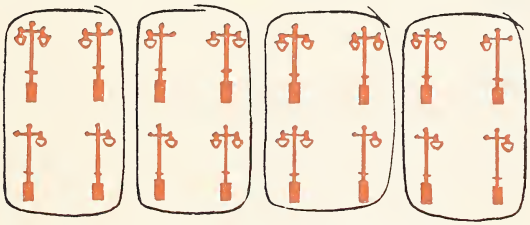
P Divide 15 by 3.
Q 14 divided by 7 = ▒
R 15 = ▒ groups of 5
S Divide 12 by 3.
T 14 = ▒ groups of 2



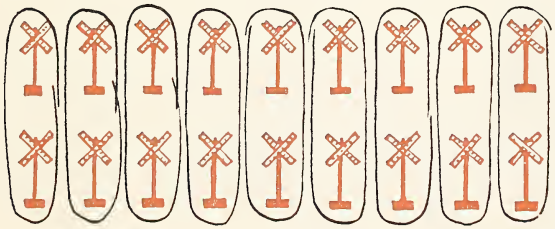
K There are 16 lights in all.
The 16 lights are divided into groups of ▭.
There are ▭ groups of 2.
16 ÷ 2 = ▭



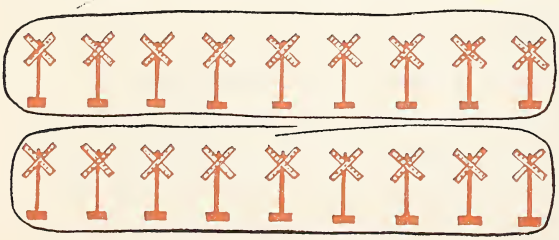
L Now the 16 lights are divided into groups of ▭.
There are ▭ groups of 8.
16 ÷ 8 = ▭



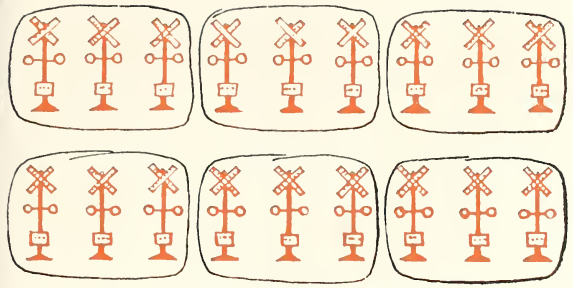
M Now the 16 lights are divided into groups of ▭.
There are ▭ groups of 4.
16 ÷ 4 = ▭



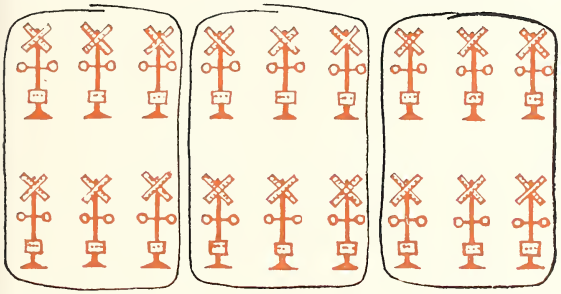
N There are 18 signs in all.
The 18 signs are divided into groups of ▭.
There are ▭ groups of 2.
18 ÷ 2 = ▭



O Now the 18 signs are divided into groups of ▭.
There are ▭ groups of 9.
18 ÷ 9 = ▭



P There are 18 signs in all.
Now the 18 signs are divided into groups of ▭.
There are ▭ groups of 3.
$18 \div 3 = $ ▭



Q Now the 18 signs are divided into groups of ▭.
There are ▭ groups of 6.
$18 \div 6 = $ ▭

A	$16 \div 4 =$ ▭	**A**	Divide 15 by 3.
B	$18 \div 3 =$ ▭	**B**	$14 =$ ▭ groups of 2
C	$14 \div 7 =$ ▭	**C**	18 divided by 2 $=$ ▭
D	$16 \div 2 =$ ▭	**D**	Divide 16 by 4.
E	$15 \div 5 =$ ▭	**E**	$10 =$ ▭ groups of 2
F	$18 \div 9 =$ ▭	**F**	Divide 18 by 9.
G	$12 \div 4 =$ ▭	**G**	$16 =$ ▭ groups of 2
H	$14 \div 2 =$ ▭	**H**	15 divided by 5 $=$ ▭
I	$12 \div 6 =$ ▭	**I**	Divide 18 by 3.
J	$18 \div 6 =$ ▭	**J**	8 divided by 2 $=$ ▭
K	$16 \div 8 =$ ▭	**K**	$9 =$ ▭ groups of 3
L	$12 \div 2 =$ ▭	**L**	$18 =$ ▭ groups of 6
M	$15 \div 3 =$ ▭	**M**	Divide 12 by 3.
N	$18 \div 2 =$ ▭	**N**	16 divided by 8 $=$ ▭
O	$12 \div 3 =$ ▭	**O**	Divide 12 by 6.

A	**B**	**C**	**D**
▭	▭	▭	▭
$2\overline{)18}$	$6\overline{)12}$	$3\overline{)6}$	$4\overline{)16}$
E	**F**	**G**	**H**
▭	▭	▭	▭
$7\overline{)14}$	$3\overline{)18}$	$4\overline{)12}$	$8\overline{)16}$
I	**J**	**K**	**L**
▭	▭	▭	▭
$6\overline{)18}$	$4\overline{)8}$	$2\overline{)16}$	$9\overline{)18}$
M	**N**	**O**	**P**
▭	▭	▭	▭
$5\overline{)10}$	$2\overline{)14}$	$3\overline{)9}$	$2\overline{)8}$

Now you should be able to divide numbers up to 18.

Looking back

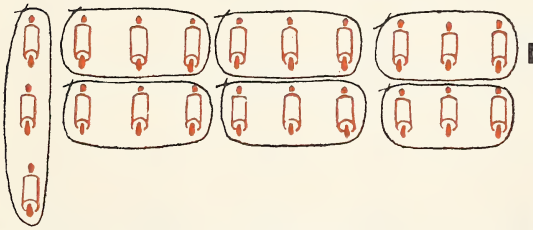
This lesson will help you remember how to divide numbers from 20 to 36.

A

There are 20 measuring cups in all.
The 20 cups are divided into groups of ▭.
There are ▭ groups of 4.
$20 \div 4 = $ ▭

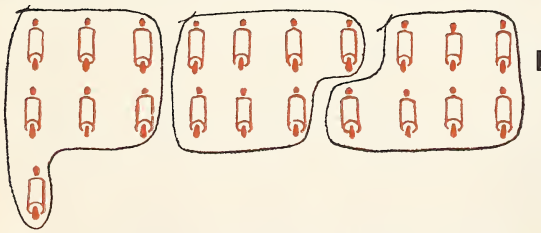
B

Now the 20 cups are divided into groups of ▭.
There are ▭ groups of 5.
$20 \div 5 = $ ▭



C

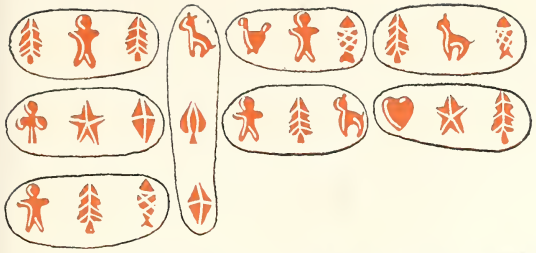
There are 21 rolling pins in all.
The 21 rolling pins are divided into groups of ▭.
There are ▭ groups of 3.
$21 \div 3 = $ ▭



D

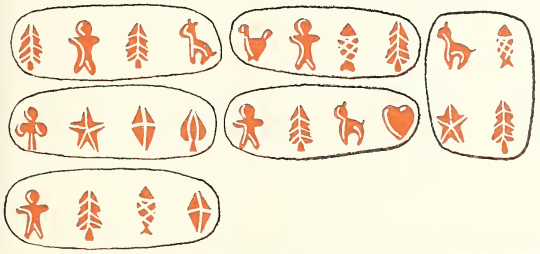
Now the 21 rolling pins are divided into groups of ▭.
There are ▭ groups of 7.
$21 \div 7 = $ ▭

A $21 \div 3 = $ ▭
B $20 \div 5 = $ ▭
C $21 \div 7 = $ ▭
D $20 \div 4 = $ ▭
E $9 \div 3 = $ ▭
F $10 \div 2 = $ ▭
G $12 \div 3 = $ ▭
H $18 \div 9 = $ ▭
I $16 \div 4 = $ ▭
J $8 \div 2 = $ ▭
K $14 \div 7 = $ ▭
L $15 \div 3 = $ ▭
M $21 = $ ▭ groups of 7
N Divide 20 by 4.
O $20 = $ ▭ groups of 5
P Divide 21 by 3.



E There are 24 cooky cutters in all.
The 24 cooky cutters are divided into groups of ▭.
There are ▭ groups of 3.
24 ÷ 3 = ▭

F Now the 24 cooky cutters are divided into groups of ▭.
There are ▭ groups of 8.
24 ÷ 8 = ▭



G Now the 24 cooky cutters are divided into groups of ▭.
There are ▭ groups of 4.
24 ÷ 4 = ▭

H Now the 24 cooky cutters are divided into groups of ▭.
There are ▭ groups of 6.
24 ÷ 6 = ▭

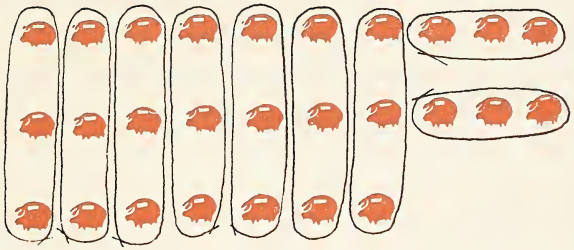
A 24 ÷ 4 = ▭
B 24 ÷ 6 = ▭
C 24 ÷ 8 = ▭
D 24 ÷ 3 = ▭

E 20 ÷ 4 = ▭
F 20 ÷ 5 = ▭
G 21 ÷ 3 = ▭
H 21 ÷ 7 = ▭

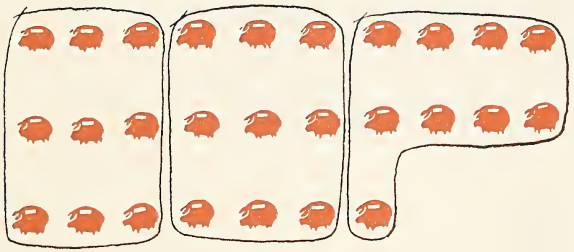
I 16 ÷ 8 = ▭
J 18 ÷ 6 = ▭
K 15 ÷ 3 = ▭
L 6 ÷ 2 = ▭

M Divide 24 by 8.
N 24 = ▭ groups of 4
O 24 divided by 3 = ▭
P Divide 20 by 5.

I There are 25 plants in all.
The 25 plants are divided into groups of ▭.
There are ▭ groups of 5.
25 ÷ 5 = ▭



J There are 27 banks in all.
The 27 banks are divided into groups of ▭.
There are ▭ groups of 3.
27 ÷ 3 = ▭



K Now the 27 banks are divided into groups of ▭.
There are ▭ groups of 9.
27 ÷ 9 = ▭

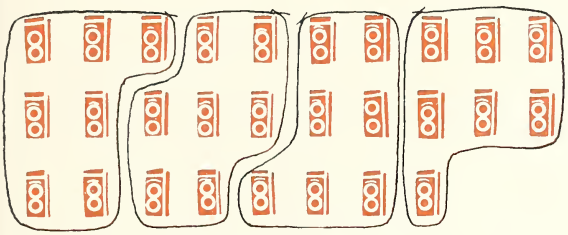
A 27 ÷ 9 = ▭
B 27 ÷ 3 = ▭
C 25 ÷ 5 = ▭
D 24 ÷ 8 = ▭
E 20 ÷ 5 = ▭
F 24 ÷ 3 = ▭
G 24 ÷ 6 = ▭
H 20 ÷ 4 = ▭
I 21 ÷ 7 = ▭
J 24 ÷ 4 = ▭

K 21 ÷ 3 = ▭
L 20 ÷ 4 = ▭
M 18 ÷ 2 = ▭
N 18 ÷ 6 = ▭
O 20 ÷ 5 = ▭
P 18 ÷ 9 = ▭
Q 18 ÷ 3 = ▭
R 14 ÷ 2 = ▭
S 24 ÷ 6 = ▭
T 15 ÷ 3 = ▭

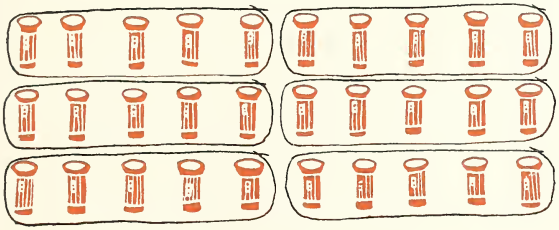
A 18 = ▭ groups of 9
B Divide 14 by 7.
C 21 divided by 3 = ▭
D 24 divided by 6 = ▭
E Divide 21 by 7.
F 24 = ▭ groups of 4
G 18 divided by 6 = ▭
H Divide 14 by 2.
I 25 = ▭ groups of 5
J Divide 18 by 2.

A 12 ÷ 4 = ▭
B 14 ÷ 7 = ▭
C 27 ÷ 9 = ▭
D 16 ÷ 4 = ▭
E 9 ÷ 3 = ▭
F 12 ÷ 3 = ▭
G 16 ÷ 8 = ▭
H 15 ÷ 5 = ▭
I 27 ÷ 3 = ▭
J 8 ÷ 4 = ▭

L There are 28 cameras in all.
The 28 cameras are divided into groups of ▒.
There are ▒ groups of 4.
28 ÷ 4 = ▒



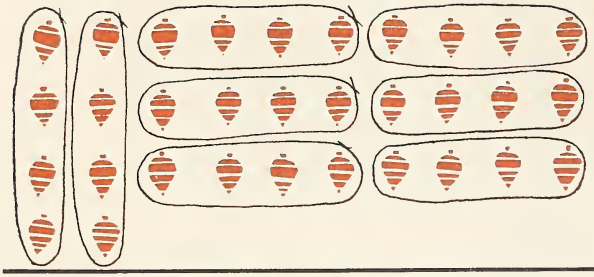
M Now the 28 cameras are divided into groups of ▒.
There are ▒ groups of 7.
28 ÷ 7 = ▒



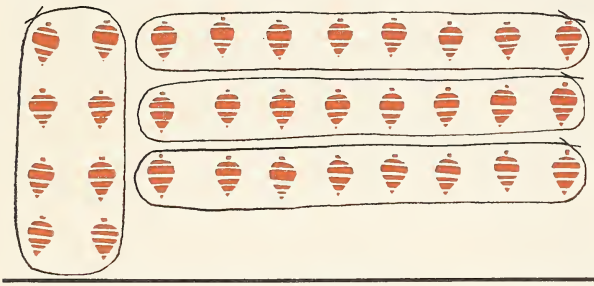
N There are 30 flashlights in all.
The 30 flashlights are divided into groups of ▒.
There are ▒ groups of 5.
30 ÷ 5 = ▒

O Now the 30 flashlights are divided into groups of ▒.
There are ▒ groups of 6.
30 ÷ 6 = ▒

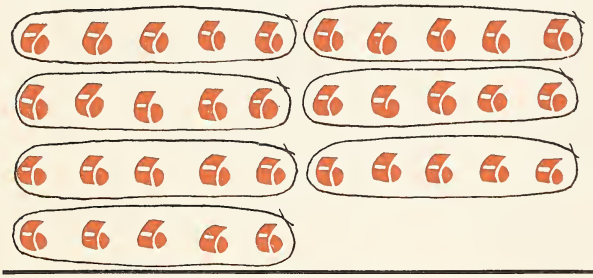
A 30 ÷ 5 = ▒
B 28 ÷ 7 = ▒
C 30 ÷ 6 = ▒
D 28 ÷ 4 = ▒
E 20 ÷ 5 = ▒
F 21 ÷ 3 = ▒
G 25 ÷ 5 = ▒
H 24 ÷ 8 = ▒
I 27 ÷ 9 = ▒
J 24 ÷ 3 = ▒
K 24 ÷ 6 = ▒
L 16 ÷ 2 = ▒
M 27 ÷ 3 = ▒
N 15 ÷ 5 = ▒
O 21 ÷ 7 = ▒
P Divide 30 by 6.
Q 28 divided by 4 = ▒
R 30 = ▒ groups of 5
S Divide 28 by 7.
T 16 = ▒ groups of 8



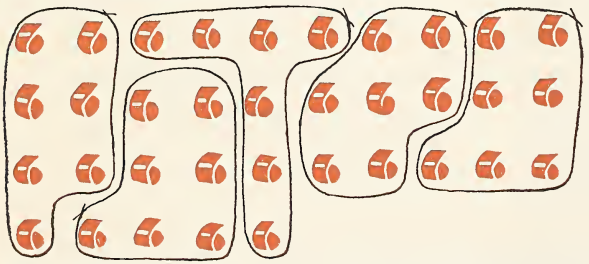
P There are 32 tops in all.
The 32 tops are divided into groups of ▒.
There are ▒ groups of 4.
32 ÷ 4 = ▒



Q Now the 32 tops are divided into groups of ▒.
There are ▒ groups of 8.
32 ÷ 8 = ▒

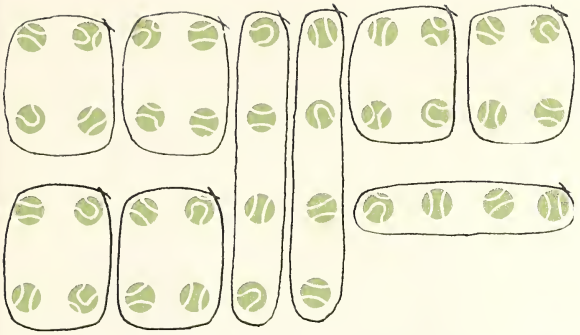


R There are 35 whistles in all.
The 35 whistles are divided into groups of ▒.
There are ▒ groups of 5.
35 ÷ 5 = ▒

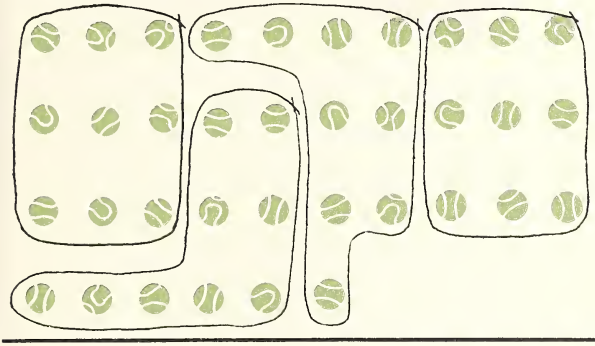


S Now the 35 whistles are divided into groups of ▒.
There are ▒ groups of 7.
35 ÷ 7 = ▒

A 35 ÷ 5 = ▒
B 32 ÷ 8 = ▒
C 35 ÷ 7 = ▒
D 30 ÷ 5 = ▒
E 32 ÷ 4 = ▒
F 21 ÷ 7 = ▒
G 27 ÷ 9 = ▒
H 20 ÷ 4 = ▒
I 24 ÷ 4 = ▒
J 30 ÷ 6 = ▒
K 16 ÷ 8 = ▒
L 12 ÷ 3 = ▒
M 25 ÷ 5 = ▒
N 28 ÷ 7 = ▒
O 18 ÷ 6 = ▒
P 32 = ▒ groups of 8
Q 32 divided by 4 = ▒
R 35 = ▒ groups of 7
S Divide 35 by 5.
T 27 divided by 3 = ▒



T There are 36 balls in all.
The 36 balls are divided into groups of ▭.
There are ▭ groups of 4.
36 ÷ 4 = ▭



U Now the 36 balls are divided into groups of ▭.
There are ▭ groups of 9.
36 ÷ 9 = ▭

V Now the 36 balls are divided into groups of ▭.
There are ▭ groups of 6.
36 ÷ 6 = ▭

A 32 ÷ 4 = ▭
B 36 ÷ 9 = ▭
C 36 ÷ 4 = ▭
D 24 ÷ 4 = ▭
E 30 ÷ 5 = ▭
F 28 ÷ 4 = ▭
G 30 ÷ 6 = ▭
H 35 ÷ 5 = ▭
I 24 ÷ 3 = ▭
J 35 ÷ 7 = ▭
K 21 ÷ 3 = ▭
L 32 ÷ 8 = ▭
M 36 = ▭ groups of 9
N 36 divided by 6 = ▭
O Divide 36 by 4.
P 27 = ▭ groups of 9

Now you should be able to divide numbers from 20 to 36.

Using arithmetic

A

B

A Ann made surprise packages for a school party. She had 15 toys. She wanted to put 3 toys in each box. How many boxes did she need?

THINK Ann put the toys in groups of 3. $15 \div 3 = \square$. There were $\square$ groups of 3. Ann needed 1 box for each group. She needed $\square$ boxes in all.

B Tom spent 35¢ for apples for the school party. The apples that he bought cost 5¢ each. How many of these apples did he buy?

THINK With each group of 5 pennies, Tom could buy 1 apple. $35 \div 5 = \square$

C Ann bought a pound of nuts for the party. At the store, nuts were sold in 8-ounce cans. How many cans did she buy?

THINK 1 pound = how many ounces?

D John had 20¢ to spend for candy bars for the party. How many 5-cent candy bars could he have bought?

E Bill sold 30¢ worth of tickets for the school party. Bill sold the tickets for 5¢ each. How many tickets did he sell?

F Sue had to buy 36 cupcakes. They were in packages of 4. How many packages should she have bought?

G Sue also had to buy 36 hamburger buns. The buns were in packages of 6. How many packages of buns should she have bought?

H At the toy store, Jim bought some 3-cent pencils for the party. How many pencils did he buy for 21¢?

I Jack and Don went to the toy store to buy 30¢ worth of games. How many 6-cent games could they buy?

J At the toy store, the clerk was putting 27 toy firemen in rows. She put 9 firemen in each row. How many rows did she make?

K A sign said that the toy firemen cost 7¢ apiece. How many of them could Jack have bought with 35¢?

L Carol wanted to buy 27 balloons. At the toy store, the balloons were sold in packages of 3. How many of these packages should Carol have bought?

M Don went to the store to buy toy boats. He had 32¢. He saw some boats that cost 8¢ each. He could have bought how many of them with his 32¢?

N Bob sold 15¢ worth of tickets for the school party. The tickets were 5¢ each. How many tickets did Bob sell?

O 28 children went to the dime store in groups of 4. How many groups went to the dime store?

P Ellen saw some flowers for sale. They were in bunches of 6. She needed 18 flowers for the party. How many bunches should she have bought?

Q The children bought 25 different things at the dime store. The clerk put the things they bought into bags. She put 5 things in each bag. She used how many bags?

Checking up

	Test 1	Test 2	Test 3	Test 4
A	$12 \div 2 =$ ▒	$16 \div 2 =$ ▒	$24 \div 8 =$ ▒	$36 \div 4 =$ ▒
B	$8 \div 4 =$ ▒	$14 \div 7 =$ ▒	$20 \div 5 =$ ▒	$27 \div 3 =$ ▒
C	$4 \div 2 =$ ▒	$16 \div 4 =$ ▒	$21 \div 7 =$ ▒	$35 \div 5 =$ ▒
D	$12 \div 6 =$ ▒	$15 \div 3 =$ ▒	$25 \div 5 =$ ▒	$32 \div 8 =$ ▒
E	$9 \div 3 =$ ▒	$18 \div 9 =$ ▒	$20 \div 4 =$ ▒	$28 \div 4 =$ ▒
F	$10 \div 2 =$ ▒	$14 \div 2 =$ ▒	$24 \div 6 =$ ▒	$36 \div 6 =$ ▒
G	$12 \div 4 =$ ▒	$18 \div 3 =$ ▒	$21 \div 3 =$ ▒	$28 \div 7 =$ ▒
H	$6 \div 2 =$ ▒	$15 \div 5 =$ ▒	$24 \div 4 =$ ▒	$36 \div 9 =$ ▒
I	$10 \div 5 =$ ▒	$18 \div 2 =$ ▒	$27 \div 9 =$ ▒	$30 \div 5 =$ ▒
J	$6 \div 3 =$ ▒	$16 \div 8 =$ ▒	$24 \div 8 =$ ▒	$32 \div 4 =$ ▒
K	$8 \div 2 =$ ▒	$18 \div 6 =$ ▒	$20 \div 5 =$ ▒	$35 \div 7 =$ ▒
L	$12 \div 3 =$ ▒	$14 \div 7 =$ ▒	$24 \div 3 =$ ▒	$30 \div 6 =$ ▒

Using arithmetic

A

B

A In the toy store Carol saw 4 rows of small rocking chairs. There were 5 rocking chairs in each row. How many rocking chairs did Carol see?
4 ~~ 5 = ▒

B Betty had 32 records. She gave 8 of them to her brother. How many records did Betty have then?
32 ~~ 8 = ▒

C Ann had 25 cents to spend for paper dolls. How many 5-cent paper dolls could she have bought with this money?
25 ~~ 5 = ▒

D John had 25 baseball cards. His brother gave him 5 more cards. How many baseball cards did John have then?
25 ~~ 5 = ▒

E At the store some toy trucks came in boxes of 36. The clerk wanted to sell them in sets of 6. How many sets of 6 trucks could he make out of each box of 36?
36 ~~ 6 = ▒

F Bob had 36 marbles. He gave 6 of them to Tom. How many marbles did Bob have then?
36 ~~ 6 = ▒

G For 7 weeks Don saved 5¢ a week. Then he said to his mother that he had exactly enough money to buy a magnet that cost 35¢. Had Don saved enough money to buy the magnet?
7 ~~ 5 = ▒

H Betty had 7 paper dolls. She bought 5 more paper dolls. How many paper dolls did Betty have then?
7 ~~ 5 = ▒

I Sue wanted to buy 24 paper dolls. The ones she liked came on cards of 8. How many cards of paper dolls should she have bought?
24 ~~~ 8 = ▒

J Tom had 4 puzzles. He bought 3 more puzzles. How many puzzles did he have then?
4 ~~~ 3 = ▒

K Carol bought 4 dresses for each of her 6 paper dolls. How many dresses did she buy altogether?
6 ~~~ 4 = ▒

L Nancy had a box of 24 crayons. Her baby sister broke 8 of them. Then how many crayons were left in the box?
24 ~~~ 8 = ▒

M Dick bought 4 boxes of toy cars. Each box had 3 cars in it. How many cars did he buy?
4 ~~~ 3 = ▒

N Jim bought some marbles that cost 9¢ a bag. He spent 27¢ for them. How many bags of marbles did he buy?
27 ~~~ 9 = ▒

Keeping skillful

A Add 260 and 458.
B 844 + 65 = ▒
C 304 + 261 + 432 = ▒
D Add 84, 96, and 73.
E 523 + 615 + 472 = ▒
F 907 + 384 + 526 = ▒
G 689 + 257 = ▒
H Subtract 63 from 750.
I 1806 − 929 = ▒
J 632 − 578 = ▒
K Subtract 365 from 700.
L 504 − 486 = ▒
M 22 + 38 + 41 = ▒
N 4063 − 98 = ▒
O 675 + 295 + 439 = ▒
P 879 + 240 = ▒
Q 995 − 276 = ▒
R 607 − 431 = ▒
S 140 + 386 + 224 = ▒
T 8000 − 379 = ▒
U 56 + 13 + 39 = ▒

A 18 ÷ 2 = ▒
B 7 × 5 = ▒
C 3 × 9 = ▒
D 36 ÷ 4 = ▒
E 6 ÷ 2 = ▒
F 4 × 8 = ▒
G 4 × 5 = ▒
H 36 ÷ 6 = ▒
I 2 × 8 = ▒
J 6 × 4 = ▒
K 28 ÷ 7 = ▒
L 4 × 9 = ▒
M 32 ÷ 8 = ▒
N 30 ÷ 5 = ▒
O 6 × 5 = ▒
P 14 ÷ 2 = ▒
Q 36 ÷ 4 = ▒
R 3 × 4 = ▒
S 4 × 7 = ▒
T 27 ÷ 3 = ▒
A Multiply 3 by 8.
B 6 twos = ▒
C Divide 36 by 9.
D 7 multiplied by 4 = ▒
E 4 divided by 2 = ▒
F 5 fives = ▒
G 7 times 3 = ▒
H 8 multiplied by 3 = ▒
I Divide 24 by 4.
J Multiply 6 by 6.

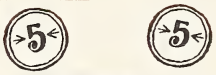
Looking back This lesson shows how to count money.

nickel
5 cents
5¢ A

B

dime
10 cents
10¢ C

D



E

quarter
25 cents
25¢ F

G

H

half dollar
50 cents
50¢ I

J

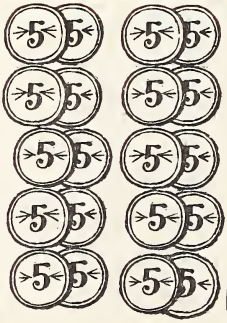
K

L

M

dollar
100 cents
$1 N

O



P

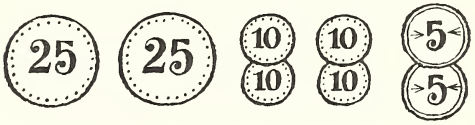
Q

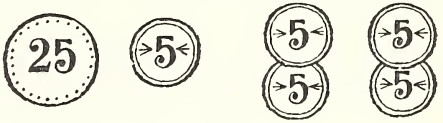
R

S

A 1 half dollar = ▒ quarters
B 1 dime = ▒ cents
C 1 quarter = ▒ nickels
D 1 nickel = ▒ cents
E 1 dollar = ▒ half dollars
F 1 half dollar = ▒ cents
G 1 dime = ▒ nickels
H 1 dollar = ▒ dimes
I 1 half dollar = ▒ dimes
J 1 dollar = ▒ quarters
K 1 quarter = ▒ cents
L 1 dollar = ▒ nickels
M 1 half dollar = ▒ nickels
N 1 dollar = ▒ cents

E


F


G

10 20 25 25¢ A

25 35 45 50 50¢ B

C

D

A 25¢ = 4 nickels ▒ pennies
B $1 = ▒ half dollar ▒ dimes
C 50¢ = 2 dimes ▒ nickels
D 3 nickels 10 pennies = ▒¢
E 4 dimes 10 pennies = ▒¢
F 1 quarter = 2 nickels ▒ pennies
G 1 half dollar = 1 quarter ▒ pennies
H $1 = 3 quarters ▒ nickels
I 1 dime 1 nickel 10 pennies = ▒¢
J $1 = 2 quarters ▒ nickels
K 3 dimes 3 nickels 5 pennies = ▒¢
L $1 = 2 quarters ▒ pennies
M 1 half dollar = 2 dimes ▒ pennies
N 10¢ = ▒ nickel ▒ pennies
O 2 dimes 5 nickels 5 pennies = ▒¢
P 50¢ = 1 quarter ▒ nickels
Q 1 dollar = 7 dimes ▒ nickels
R 25¢ = ▒ dime 3 nickels

25 50 60 65 66 67

67¢

A

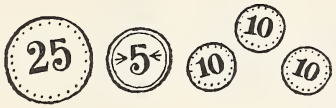
50 75 80 90 91 92 93

93¢

B

C

D



E

F

G

H

I

J

K

L

M

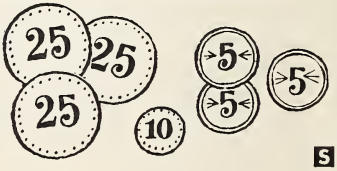
N

O

P

Q

R



S

1 dollar
$1

A

1 dollar

50 75 85 86 87

one dollar and eighty-seven cents
$1 and 87¢

one eighty-seven

B

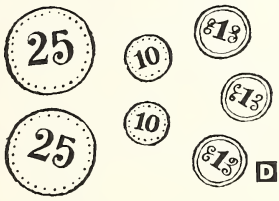
5 dollars 7 dollars

10 20 21 22

seven dollars and twenty-two cents
$7 and 22¢

seven twenty-two

C



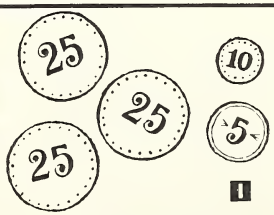
D

E

F

G

H



I

Now you should be able to count money.

Looking back

In this lesson you will learn how to write amounts of money.

eleven dollars and thirty-two cents

$11.32

A

one dollar and two cents

$1.02

B

six dollars

$6 $6.00

C

seventy-three cents

73¢ $.73

D

eight cents

8¢ $.08

E

F

G

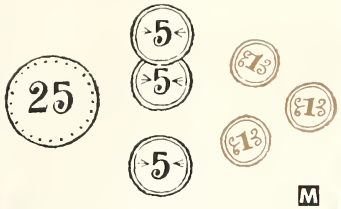
H

I

J

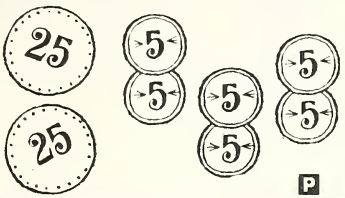
K

L


M

N

O


P

Q

Write with numerals and signs.

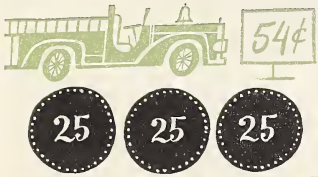
A nineteen dollars and five cents
B twenty-eight dollars and fifty cents
C ten dollars and eighteen cents
D sixty-four cents
E one hundred thirty cents
F twenty dollars
G one cent
H seventy-four dollars and thirteen cents
I two hundred five cents
J four dollars and seven cents
K seventy-eight cents
L twenty dollars and ten cents
M one hundred sixteen cents
N ninety cents
O fifteen dollars and twenty-four cents
P six cents
Q fifty-five dollars and seventy-five cents
R three hundred forty cents

Read.

A	$16.80	A	$45.20
B	$.37	B	$138.06
C	$.04	C	$12.19
D	$30.00	D	$.86
E	$75.55	E	$3.65
F	$.89	F	$98.99
G	$89	G	$.07
H	$26.47	H	$340
I	$19.95	I	$18.50
J	$7.16	J	$56
K	$40.08	K	$.56
L	$100	L	$7.27
M	$.15	M	$85.05
N	$.60	N	$90
O	$620	O	$.17
P	$.40	P	$17
Q	$115.03	Q	$285.56
R	$20.00	R	$.77

Now you should be able to write amounts of money.

Looking back This lesson shows how to make change.



A

55

65

75¢

B

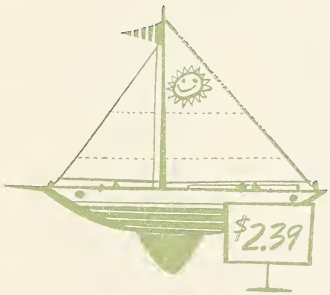
72

73

74

75

1 dollar



C

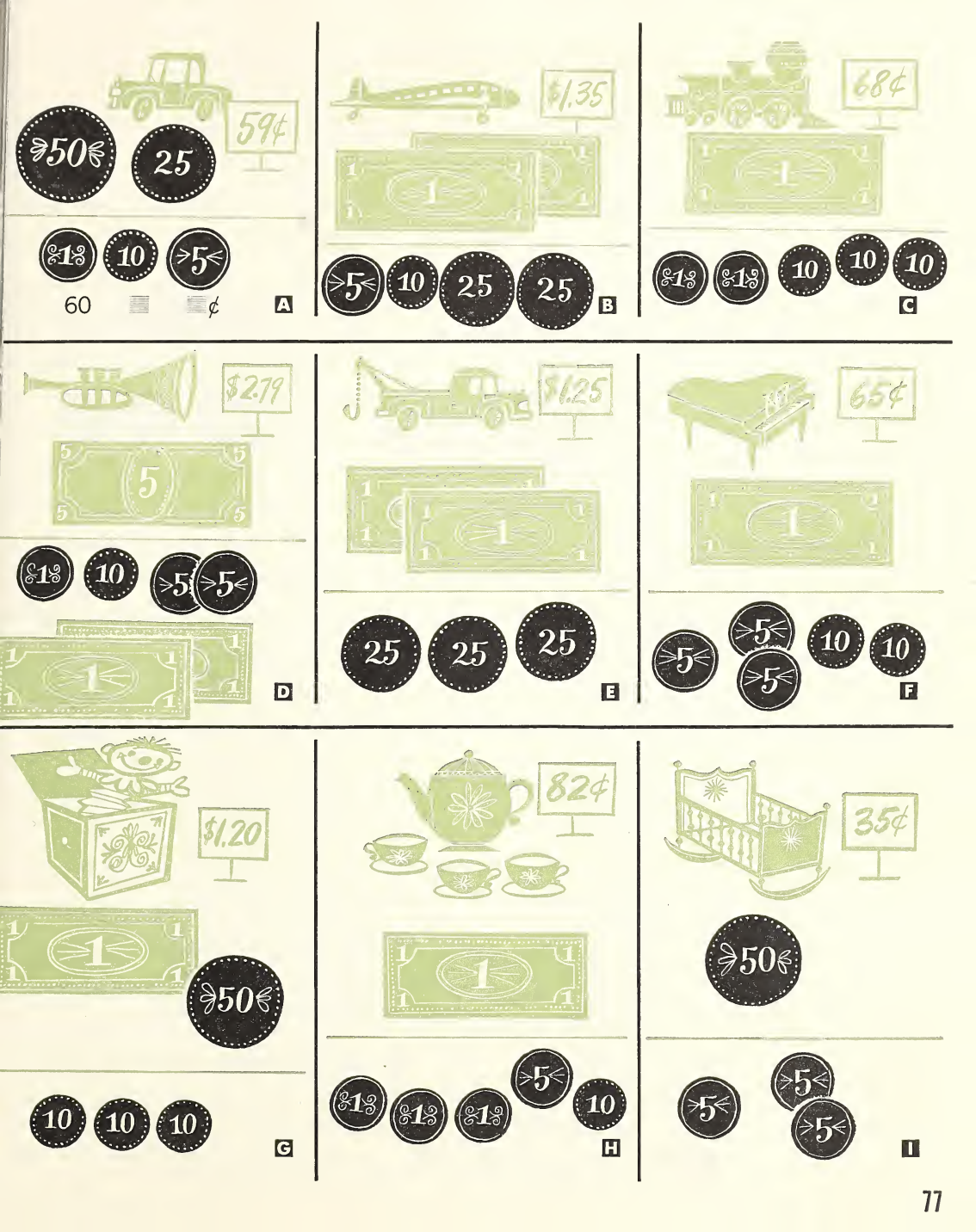
2 forty

2 fifty

3 dollars

4 dollars

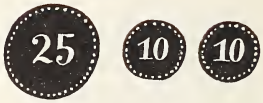
5 dollars


59¢
50
25
1
10
5
60
¢
A
$1.35
5
10
25
25
B
68¢
1
1
10
10
10
C
$2.79
5
1
10
5
5
D
$1.25
25
25
25
E
65¢
5
5
5
10
10
F
$1.20
50
10
10
10
G
82¢
1
5
10
H
35¢
50
5
5
5
I

Draw the coins or bills that you would give in making change for each problem on this page. For each coin or bill write the number you would say as you make change.

A

B



C

D Bill gave a clerk $1 to pay for a toy car that cost 15¢.

E Mary bought a doll bed for 29¢. She gave the clerk a half dollar.

F Carol bought a 35-cent doll. She gave the clerk 2 quarters.

G Tom bought an airplane kit for 49¢. He gave the clerk a quarter and 3 dimes.

H John gave a clerk a 5-dollar bill to pay for a book that cost $1.75.

I Don gave a clerk a half dollar to pay for a puzzle that cost 31¢.

J Betty gave a clerk 6 dimes to pay for a small doll buggy that cost 52¢.

K Ann bought a game that cost $2.25. She gave the clerk a 5-dollar bill.

L Jim bought a toy airplane that cost 72¢. He gave the clerk $1.

M Jane bought a doll chair that cost 36¢. She gave the clerk a half dollar.

N Tom gave the clerk a dollar to pay for a book that cost 50¢.

O Sue gave the clerk $5 to pay for a doll that cost $4.03.

P Bill bought a roundhouse for his engine. The roundhouse cost $2.68. Bill gave the clerk $5.

Q Don bought a magnet that cost 39¢. He gave the clerk $1.

Now you should know how to make change.

Thinking straight

A How many ways can you make change for a dime? What are they?

B Tell six ways to make change for a quarter.

C Nancy gave a clerk a half dollar to pay for a puzzle that cost 16¢. The clerk used the smallest number of coins that he could when he gave her the change. Name the coins he gave her.

D Write the largest number you can using each of the figures 1, 2, 3, and 4. Use each figure only once.

E Write the smallest number you can using each of the figures 1, 2, 3, and 4. Use each figure only once.

F Write the largest number you can using each of the figures 5, 8, 0, and 2. Use each figure only once.

G Write the smallest number you can using each of the figures 5, 8, 0, and 2. Use each figure only once.

H One school has 213 boys. Another school has 123 boys. Does the 1 in 213 stand for more or fewer boys than the 1 in 123? Why?

Keeping skillful

A 4 dimes 2 nickels = ▭¢
B 1 quarter 2 dimes = ▭¢
C 3 nickels 10 pennies = ▭¢
D 1 half dollar 3 dimes = ▭¢
E 3 nickels 2 dimes = ▭¢
F 2 quarters 5 pennies = ▭¢
G 1 half dollar 1 quarter = ▭¢
H 6 nickels = ▭¢
I 8 dimes = ▭¢
J 1 half dollar 3 nickels = ▭¢
K 3 quarters 3 nickels = ▭¢
L 5 dimes 15 pennies = ▭¢
M 1 half dollar 4 dimes = ▭¢
N 1 quarter 6 nickels = ▭¢

A $35 \div 5 =$ ▭
B $28 \div 4 =$ ▭
C $5 \times 6 =$ ▭
D $36 \div 4 =$ ▭
E $7 \times 5 =$ ▭
F $3 \times 9 =$ ▭
G $30 \div 6 =$ ▭
H $32 \div 4 =$ ▭
I $7 \times 3 =$ ▭
J $36 \div 6 =$ ▭
K $4 \times 5 =$ ▭
L $35 \div 7 =$ ▭
M $8 \times 4 =$ ▭
N $3 \times 8 =$ ▭

A $27 \div 9 =$ ▭
B $6 \times 4 =$ ▭
C $4 \times 7 =$ ▭
D $36 \div 9 =$ ▭
E $9 \times 3 =$ ▭
F $4 \times 9 =$ ▭
G $21 \div 7 =$ ▭
H $27 \div 3 =$ ▭
I $4 \times 6 =$ ▭
J $30 \div 5 =$ ▭
K $6 \times 6 =$ ▭
L $8 \times 3 =$ ▭
M $28 \div 7 =$ ▭
N $6 \times 5 =$ ▭

Learning how

This lesson will show you how to add dollars and cents.

see

A

Jim earned money for the Junior Red Cross. One week he earned 35¢. The next week he earned 41¢. The third week he earned 85¢. How much money in all did he earn?

35¢ + 41¢ + 85¢ = ▒

You must find this number.

```
 35
 41
 85
---
161
```

You add just as you do with any numbers.

The sum 161 means 161¢.

B

When you add amounts of money, you should write the amounts with points and dollar signs.

```
 $ .35
   .41
   .85
------
$1.61
```

Write the points in a line, one under the other. Write only one dollar sign.

Remember to put a point and a dollar sign in the answer.

Jim earned $1.61 for the Junior Red Cross.

$.35 + $.41 + $.85 = $1.61

think

Bob earned $1.15 by raking leaves and $1.25 by helping his father take down screens. How much money did Bob earn in these two ways?

$1.15 + $1.25 = ▒ ← You must find this number.

$1.15
1.25
$2.40

What should you remember about the points?

What sign should you write in your answer?

Bob earned ▒ in all.
$1.15 + $1.25 = ▒

try

A Sue's mother paid her 35¢ for washing dishes and 20¢ for making beds. How much in all did Sue's mother pay her?
$.35 + $.20 = ▒

$.35
.20
$.55

B $.50 + $.39 + $.22 = ▒

$ .50
.39
.22
$1.11

C $3.40 + $.85 = ▒

$3.40
.85
$4.25

D $2.29 + $1.74 = ▒

$2.29
1.74
$4.03

do

Add.

A 67¢, 49¢, 85¢
B $.66, $.58
C 26¢, 91¢, 48¢
D $25.60, $22.95
E $12.82, $39.08
F $.55, $.34, $.26
G 35¢, 40¢, 76¢
H $56.75, $38.72
I 53¢, 89¢, 75¢
J $4.63, $3.89, $5.07
K $2.47, $1.10, $5.38
L $1.75, $.47, $.88
M 98¢, 23¢, 16¢
N $9.03, $6.50, $.28
O $.48, $1.77, $.59
P $6.85, $8.50, $3.49
Q $2.14, $.38, $.59

A 43¢ + 30¢ + 25¢ = ▒
B $.75 + $36.95 + $40.07 = ▒
C $.22 + $.05 + $.48 = ▒
D $7.39 + $5.00 + $8.72 = ▒
E $58 + $29.95 = ▒
F $31.45 + $1.84 + $9.16 = ▒
G $6.91 + $3.10 + $5.07 = ▒
H $20.00 + $14.95 = ▒
I $4.20 + $1.18 + $3.56 = ▒

Now you should know how to add numerals that mean money.

Learning how

In this lesson you will learn how to subtract amounts of money.

see

A

John has $2 to spend. If he buys a game for $1.35, how much money will he have left to spend?

$2.00 − $1.35 = ▒

You must find this number.

B

When you write the numerals, be sure to keep the points one under the other.

$2.00
1.35

Think of one of the dollars as made up of coins.

C

Take away one dollar and thirty-five cents.

$2.00
1.35

Subtract as you always do.

$ .65

Remember to put a dollar sign and a point in the answer.

D

John will have $.65 left to spend.

$2.00 − $1.35 = $.65

think

Mary had $3.48 in her savings bank. She took out $.79 to buy some paper dolls. How much money was left in her bank?

$3.48 − $.79 = ▒ — You must find this number.

$$\begin{array}{r} \$3.48 \\ .79 \\ \hline \$2.69 \end{array}$$

What should you remember about the points?

What sign should you write in the answer?

There was ▒ left in Mary's bank. $3.48 − $.79 = ▒

try

A Jim had 42¢ when he went to school one day. He spent 34¢ for his lunch. How much money did he have then?

$.42 − $.34 = ▒

$$\begin{array}{r} \$.42 \\ .34 \\ \hline \$.08 \end{array}$$

B $3.00 − $1.28 = ▒

$$\begin{array}{r} \$3.00 \\ 1.28 \\ \hline \$1.72 \end{array}$$

C $7.14 − $6.29 = ▒

$$\begin{array}{r} \$7.14 \\ 6.29 \\ \hline \$\ .85 \end{array}$$

D $19.62 − $17.69 = ▒

$$\begin{array}{r} \$19.62 \\ 17.69 \\ \hline \$\ 1.93 \end{array}$$

do

Subtract.

A $1.82 from $3.66
B 17¢ from 92¢
C $.38 from $1.25
D $3.49 from $8.00
E 72¢ from 90¢
F $.89 from $2.33
G $6.76 from $10.00
H 55¢ from 74¢
I $.08 from $.71

J $29.50 − $8.65 = ▒
K $.88 − $.69 = ▒
L $6.75 − $2.95 = ▒
M $7.00 − $4.38 = ▒
N $2.05 − $1.35 = ▒
O $18.30 − $4.85 = ▒
P $6.00 − $1.42 = ▒
Q $39.64 − $5.90 = ▒
R $.92 − $.83 = ▒
S $5.00 − $2.65 = ▒

A $8.15 − $3.00 = ▒
B $5.05 − $4.35 = ▒
C $6.98 − $1.43 = ▒
D $8.95 − $5.95 = ▒
E $.78 − $.56 = ▒
F $9.50 − $7.25 = ▒
G $4.15 − $2.15 = ▒
H $9.00 − $6.95 = ▒
I $6.70 − $3.26 = ▒
J $9.00 − $.85 = ▒

Now you should be able to subtract amounts of money.

Using arithmetic

A The fourth graders bought things to put in Junior Red Cross boxes. They spent $.85 at one store and $1.38 at another store. How much money did they spend at both stores?

B Bill had 50¢. He spent 23¢ for soap and the rest for combs. How much did he spend for combs?

C The children spent $4.05 at one store. They spent $.75 for notebooks and the rest for small toys. How much did they spend for small toys?

D The box of toothbrushes Tom wanted to buy cost 89¢. The toothpaste he wanted cost 35¢. How much money did he need for these two things?

E Nancy spent 15¢ for pencils, 25¢ for tablets, and 98¢ for crayons. How much did she spend altogether for these three things?

F Together, the fourth and fifth grades spent $6.24 for games to put in the Junior Red Cross boxes. The fourth grade spent $2.53. How much did the fifth grade spend?

G Ann spent 15¢ for a paintbrush and 30¢ for a paint box. She spent how much in all?

H The fourth graders spent $4.21 for toothbrushes and toothpaste. They spent $2.25 for toothbrushes and the rest for toothpaste. How much did they spend for toothpaste?

I Don spent 25¢ for a whistle, 10¢ for a top, and 15¢ for a ball. He spent how much altogether?

J Sue spent 35¢ for paste and 25¢ for colored pencils. How much money did she spend for these things?

Checking up

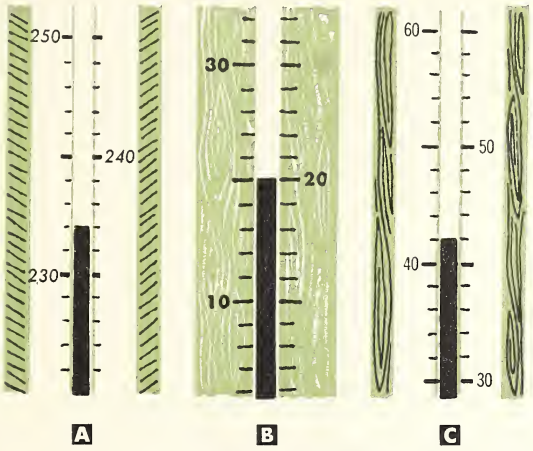
Test 1

A $.64 + $.32 = ▒
B Add 17¢, 53¢, and 76¢.
C Add $.83, $.50, and $.67.
D $6.41 + $2.75 = ▒
E $3.20 + $3.81 + $1.64 = ▒
F $9.05 + $7.28 + $4.56 = ▒
G 87¢ + 59¢ + 35¢ = ▒

Test 2

A $.87 − $.63 = ▒
B $.62 − $.57 = ▒
C Subtract $4.86 from $7.75.
D $1.29 − $.74 = ▒
E Subtract $5.25 from $9.03.
F $14.70 − $6.28 = ▒
G $15.00 − $6.47 = ▒

Keeping skillful



A What temperature is shown on Thermometer A?

B What temperature is shown on Thermometer B?

C What temperature is shown on Thermometer C?

D Which thermometer shows a temperature that is below the freezing point of water?

E Which thermometer shows a temperature that is above the boiling point of water?

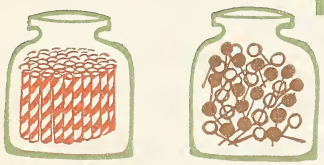
A $8 \times 3 =$ ▢	**G** $6 \times 6 =$ ▢	**M** $24 \div 6 =$ ▢	**S** $5 \times 7 =$ ▢
B $16 \div 2 =$ ▢	**H** $32 \div 8 =$ ▢	**N** $18 \div 9 =$ ▢	**T** $36 \div 6 =$ ▢
C $28 \div 7 =$ ▢	**I** $3 \times 9 =$ ▢	**O** $5 \times 4 =$ ▢	**U** $4 \times 8 =$ ▢
D $3 \times 6 =$ ▢	**J** $18 \div 3 =$ ▢	**P** $36 \div 4 =$ ▢	**V** $6 \times 4 =$ ▢
E $35 \div 5 =$ ▢	**K** $5 \times 5 =$ ▢	**Q** $6 \times 5 =$ ▢	**W** $24 \div 8 =$ ▢
F $7 \times 4 =$ ▢	**L** $9 \times 4 =$ ▢	**R** $3 \times 7 =$ ▢	**X** $30 \div 5 =$ ▢

A In 7042, ▢ is in tens' place.
B In 516, ▢ is in hundreds' place.
C In 3290, ▢ is in ones' place.
D In 8652, ▢ is in thousands' place.
E In 4709, ▢ is in ones' place.
F In 6315, ▢ is in tens' place.
G In 2648, ▢ is in thousands' place.
H In 1503, ▢ is in tens' place.
I In 5821, ▢ is in hundreds' place.
J In 3679, ▢ is in thousands' place.

A $875 - 421 =$ ▢	**G** $1576 + 2385 =$ ▢	**M** $732 + 460 + 569 =$ ▢
B $34 + 29 + 37 =$ ▢	**H** $402 + 681 + 328 =$ ▢	**N** $1547 - 937 =$ ▢
C $525 + 448 =$ ▢	**I** $1634 - 568 =$ ▢	**O** $235 + 80 + 45 =$ ▢
D $473 - 126 =$ ▢	**J** $508 - 279 =$ ▢	**P** $800 - 514 =$ ▢
E $1940 - 1225 =$ ▢	**K** $86 + 95 + 57 =$ ▢	**Q** $406 - 237 =$ ▢
F $92 + 15 + 38 =$ ▢	**L** $703 - 549 =$ ▢	**R** $382 + 98 + 176 =$ ▢

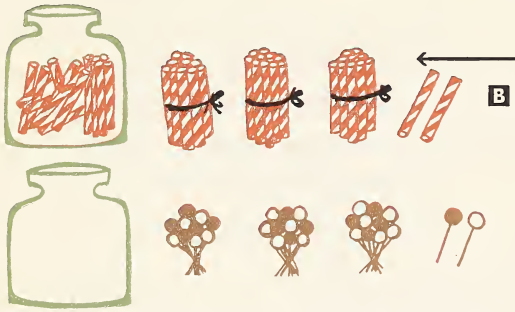
Exploring problems

see



A

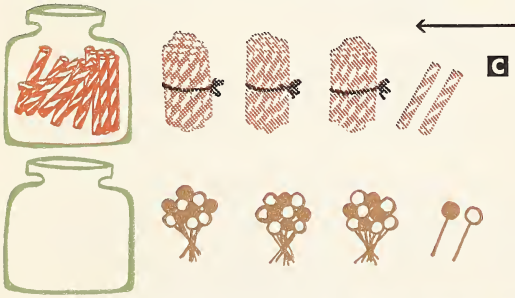
At a school sale, the girls sold 45 candy sticks and 32 lollipops. They sold how many more candy sticks than lollipops? They sold how many fewer lollipops than candy sticks?



B

Match as many candy sticks as you can with lollipops. 32 candy sticks can be matched with lollipops.

Some of the 45 candy sticks are not matched. You must find how many of the 45 candy sticks are not matched.



C

Imagine that the 32 matched candy sticks are gone.

$45-32=\square$

This shows that you imagine 32 of the 45 as gone.

You must find this number.

compute

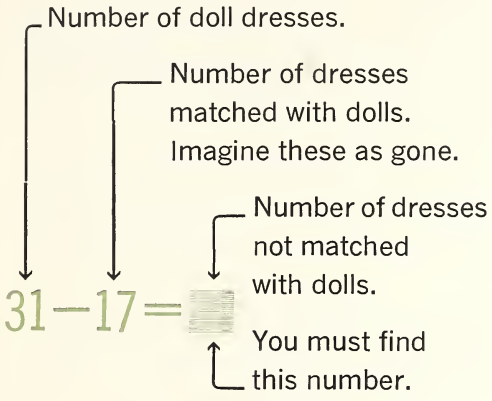
$$\begin{array}{r} 45 \\ 32 \\ \hline 13 \end{array}$$

Subtract to find the missing number. This number means that there are 13 more candy sticks than lollipops.

$45-32=\square$

The girls sold 13 more candy sticks than lollipops. They sold 13 fewer lollipops than candy sticks.

A At the school sale Nancy sold 17 dolls and 31 doll dresses. She sold how many more doll dresses than dolls?


Number of doll dresses.
Number of dresses matched with dolls. Imagine these as gone.
Number of dresses not matched with dolls.
31 − 17 = ▒
You must find this number.

Subtract 17 from 31.
Nancy sold ▒ more dresses than dolls.

B Nancy sold how many fewer dolls than doll dresses?

C Don sold 115 stamps from his collection. Jack sold 140 stamps from his collection. Don sold how many fewer stamps than Jack?
140 − 115 = ▒

D Ann collected $7.45 at the candy table. At the book table Peggy collected $10.30. Ann collected how much less money at her table than Peggy collected at hers?
$10.30 − $7.45 = ▒

E Ann sold 12 bags of nuts and 21 bags of chocolate candy. She sold how many more bags of chocolate candy than of nuts?

F Mrs. Brown spent $2.35 for books and $.90 for candy. How much more did she spend for books than for candy?

G Jim had 70¢ to spend at the sale. First he bought 25¢ worth of stamps from Don. Then Jim had how much money?

H A doll dress Sue wanted cost 50¢. A doll she wanted cost $1.35. The doll dress cost how much less than the doll?

I At the toy table Bill sold 16 model airplanes and 23 model cars. He sold how many more cars than airplanes?

J Bob did not know whether to buy a model airplane for 69¢ or a model car for 75¢. The model airplane cost how much less than the model car?

K Dick wanted to buy a bag of candy that cost 20¢ and a model car that cost 55¢. How much money did he need to buy these two things?

L Tom had $1.05 to spend. He bought a book about horses for 69¢. How much money did he have left?

Now you should know how to find how much larger or smaller one amount or group is than another amount or group.

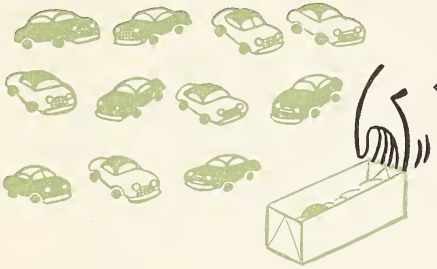
Exploring problems

see

A Bill had 11 model cars. He bought some more cars at the toy store. Then he had 14 model cars. How many model cars did he buy at the toy store?

← Bill had 11 model cars at first.

11 ← Number of cars Bill had at first



← You do not know how many more cars Bill bought.

B

$11 + \square$ ← Number of cars he bought

← Bill has 14 model cars now.

C $11 + \square = 14$ ← Number of cars he has now

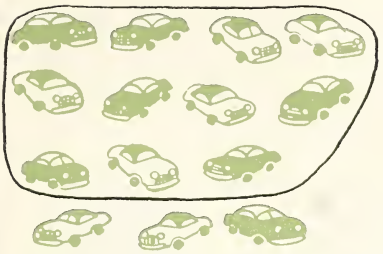
↑ You must find this number.

compute

← You know Bill has 14 model cars now.

D

14 ← Number of cars he has now



E Think of a group of cars equal to the cars Bill had at first.

11 ← Number of cars Bill had at first

F Imagine that this group of 11 cars is gone.

14
11 ← Subtract 11 from 14.
▒

14
11
3 ← Bill bought 3 cars.

The number that is left shows how many cars Bill bought at the toy store.

11 + ▒ = 14 ← This number is 3. Bill bought 3 cars.

A Ann wanted to buy a 25-cent book. She had 16¢. How much more money did she need to buy the book?

16 + ▒ = 25

- 16: Number of cents Ann had.
- ▒: Number of cents Ann must add to the money she had.
- 25: Number of cents she needed in all.
- ▒: You must find this number.

Subtract 16 from 25.
Ann needed ▒ more cents.

B Bill had 48 stamps. After he bought some new stamps, he had 70 stamps. How many new stamps did he buy?

48 + ▒ = 70

Subtract 48 from 70.

C Ellen wanted to buy a family of dolls for her dollhouse. The set of dolls cost $1.25. Ellen had 78¢. How much more money did she need to buy the doll family?

$.78 + ▒ = $1.25

Subtract $.78 from $1.25.

D At the toy store Ann counted 23 china dogs on a table. A clerk put more china dogs with them. Then Ann counted 31 china dogs. How many did the clerk put on the table?

E Ellen needed 26 toys for a party. She bought 17 of them on Monday and the others on Tuesday. How many toys did she buy on Tuesday?

F Tom had 43 marbles. He bought a new bag of marbles at the toy store. Then he had 68 marbles. How many marbles did he buy at the toy store?

G Jim bought a book with 52 pages in it. He said he would finish reading it before lunch. So far he has read 37 pages. How many more pages does he have to read?

H Carol spent $1.72 at the toy store. Don spent $1.91 at the toy store. How much more money did Don spend than Carol?

I Together, Carol and Don bought 51 small toys for a fish pond. Carol bought 27 of them. How many of these small toys did Don buy?

J Peggy paid $2.35 for a doll bed and a buggy. She paid $.98 for the bed. How much did she pay for the buggy?

K Bill needed $1.30 to buy an airplane kit. He had only 35¢. How much more money did he need before he could buy the airplane kit?

L The fourth graders want to earn $15 to buy a record player. They have earned $9.42. How much more money do they need to earn?

M The children want 30 records for the record player they are buying. Carol's mother gave them 17 records. How many more records do they want?

N Bob needed 75¢ to buy a present for his sister. He had 59¢. How much more money did he need?

O Nancy needed $1.50 to buy a doll. She had $.89. How much more money did she need before she could buy it?

P Dick had 18 old coins last week. He bought some more old coins this week. Now he has 26 old coins. He bought how many old coins this week?

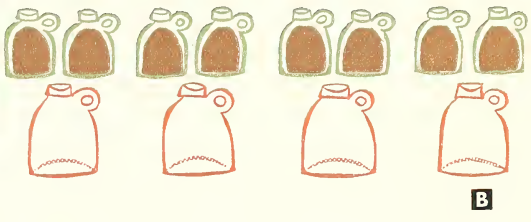
Q John had $.48. The puzzle he wanted to buy cost $.85. How much more money did he need to buy it?

R Jim wanted to buy a model boat that cost $.85. He had $.48. Jim needed how much more money to buy the boat?

In these problems you were finding how many things were added or how many more things are needed.

Looking back

This lesson will help you to check up on what you know about measures.



A A farmer sold 2 gallons of syrup. This was equal to how many quarts?

THINK Each gallon is equal to a group of 4 quarts. 2 gallons are equal to 2 groups of 4 quarts. $2 \times 4 =$ ▒. The 2 gallons of syrup were equal to ▒ quarts of syrup.

B Another farmer sold 8 pints of syrup. This was equal to how many quarts?

THINK Each group of 2 pints is equal to 1 quart. 8 pints are equal to ▒ groups of 2 pints. $8 \div 2 =$ ▒. The 8 pints of syrup were equal to ▒ quarts.

C 3 weeks are equal to how many days?

THINK Each week is equal to a group of ▒ days. 3 weeks are equal to 3 groups of 7 days. $3 \times 7 =$ ▒

D 27 feet are equal to how many yards?

THINK Each group of 3 feet is equal to ▒ yard. 27 feet are equal to ▒ groups of 3 feet. $27 \div 3 =$ ▒

E 4 yards are equal to how many feet?

F 35 days are equal to how many weeks?

A 28 days = ▒ weeks
B 15 feet = ▒ yards
C 9 gallons = ▒ quarts
D 16 pints = ▒ gallons
E 4 weeks = ▒ days
F 8 quarts = ▒ pints
G 21 feet = ▒ yards
H 14 days = ▒ weeks
I 28 quarts = ▒ gallons
J 9 yards = ▒ feet
K 4 gallons = ▒ pints
L 24 feet = ▒ yards
M 5 weeks = ▒ days
N 2 gallons = ▒ pints
O 14 pints = ▒ quarts
P 21 days = ▒ weeks
Q 27 feet = ▒ yards
R 5 gallons = ▒ quarts
S 6 quarts = ▒ pints
T 18 feet = ▒ yards
U 24 pints = ▒ gallons
V 9 quarts = ▒ pints

Exploring problems

see

A Jim had some baseball cards. Bill gave him 15 more baseball cards. Now Jim has 41 baseball cards. How many cards did he have to begin with?

← You do not know how many cards Jim had at first.

B

□ ← Number of cards Jim had at first

← Bill gave him 15 more cards.

□ + 15 ← Number of cards Bill gave him

← Now Jim has 41 cards.

C

□ + 15 = 41 ← Number of cards Jim has now

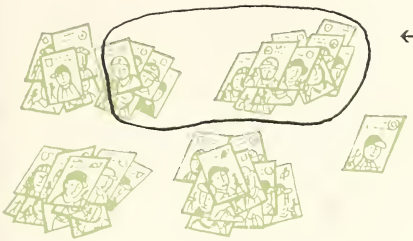
You must find this number.

compute

← You know Jim has 41 cards now.

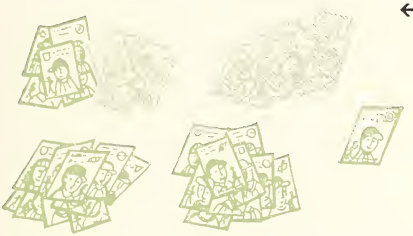
D

41 ← Number of cards he has now



E Think of a group of cards equal in number to the cards Bill gave to Jim.

15 ← Number of cards Bill gave to Jim



F Imagine that this group of 15 cards is gone.

41
15 ← Subtract 15 from 41.
▒▒

41
15
26 ← He had 26 cards at first.

The number left shows how many cards Jim had at first.

▒ + 15 = 41 ← This number is 26. Jim had 26 cards at first.

A After Bill was given 35 new stamps for his collection, he had 82 stamps. How many did he have to begin with?

▒ + 35 = 82

- ▒ : Number of stamps Bill had at first.
- 35 : Number of stamps given to Bill.
- 82 : Number of stamps he has now.
- ▒ : You must find this number.

Imagine that the 35 stamps are gone.
Subtract 35 from 82.
Bill had ▒ stamps at first.

B Don had a collection of old coins. He got 18 more old coins for his birthday. Then he had 49 old coins. How many old coins did Don have before his birthday?

THINK How many coins do you imagine are gone?
▒ + 18 = 49 Subtract 18 from 49.

C Peggy put 14 new butterflies in her collection today. "Now I have 32 butterflies," she said. "I wonder how many I had before." How many did she have the day before?

D Don said, "I just put 25 new marbles in my marble box. Now I have 219 marbles." How many marbles did he have in his marble box before he put the 25 new marbles in it?

E Jim made 4 new model airplanes. Then he had 16 airplanes. How many did he have to start with?

F Ann counted her postcard collection in May. During the summer her friends sent her 22 more postcards. Then she had 51 postcards. How many did she have in May?

G Jim found 14 new stones. He put them with his old stones and found that he had 72 in all. How many of these stones were old ones?

H Sue bought a book of 12 paper dolls. Then she had 31 paper dolls. She had how many paper dolls at first?

I Last week Bob saved some money to buy a toy fire engine. This week he saved 36¢. When he put the 36¢ with the money he saved last week, he had $2.05. How much money did he save last week?

J Dick is saving money to buy a radio kit. The radio kit costs $2.95. Dick has $.87. How much more money does Dick need to buy the radio kit?

K Mary saves pictures of horses. She gave 7 of her 31 pictures of horses to Sue. Then how many pictures of horses did Mary have?

L Tom's father gave him a box of 18 pencils. Then Tom had 35 pencils. How many pencils did Tom have before his father gave him the box of 18?

M After Betty had earned 42¢, she had $1.06. How much money did she have before she earned the 42¢?

In many of these problems you were finding out how many things there were to begin with.

Keeping skillful

A $782 + 438 = \square$
B $386 + \square = 567$
C $\square + 502 = 841$
D $615 + 378 = \square$
E $\square + 449 = 703$
F $267 + \square = 920$

A $35 \div 7 = \square$
B $9 \times 3 = \square$
C $28 \div 4 = \square$
D $30 \div 6 = \square$
E $8 \times 4 = \square$
F $3 \times 7 = \square$

G $36 \div 9 = \square$
H $4 \times 7 = \square$
I $32 \div 4 = \square$
J $7 \times 5 = \square$
K $9 \times 2 = \square$
L $24 \div 3 = \square$

M $5 \times 6 = \square$
N $32 \div 8 = \square$
O $4 \times 5 = \square$
P $14 \div 7 = \square$
Q $5 \times 5 = \square$
R $6 \times 6 = \square$

Using arithmetic

A On the way to the beach, Jim bought a sand pail for 29¢ and a big rubber ball for 65¢. How much did these two things cost in all?
$.65 ~~ $.29 = ▒

B A rubber horse that Jim also wanted to buy cost $1.50. He had 89¢ left. How much more money did he need to buy the rubber horse?
$.89 ~~ ▒ = $1.50

C Ellen had 55¢ when she went to the beach. She paid 25¢ for a cap. How much money did she have left?
55¢ ~~ 25¢ = ▒

D Sue and Ann were looking for shells. Sue said to Ann, "How many shells did you have when we started?" Ann said, "I don't know, but I have 42 now, and I found 15 today." How many shells did Ann have to start with?
▒ ~~ 15 = 42

E Bill and Tom counted the stones they found. Bill said that he had 226 stones. Tom said, "All I have is 120 stones." Bill had how many more stones than Tom?
226 ~~ 120 = ▒

F Three girls shared the cost of a box of popcorn equally. The popcorn cost 21¢. How much did each girl pay?

G To make a large sand castle, each of 4 boys carried 8 pails of sand. How many pails of sand did they use to make the sand castle?

H 18 children at the beach made sand castles. 2 children worked on each castle. How many castles did they make?

I Don paid 19¢ for a rubber duck and 33¢ for a toy boat. He paid how much less for the rubber duck than for the toy boat?

J Nancy took 6 empty bottles to the beach store. The clerk gave her 2¢ for each bottle. How many cents did he give her?

K Ann makes pictures with shells. She uses 9 shells for each picture. How many pictures can she make with 27 shells she found on the beach?

L The beach house is 12 feet high. The flagpole next to it is 25 feet high. How much higher is the flagpole than the beach house?

THINK You know you subtract to find how much larger one group is than another. You also subtract to find how much higher one thing is than another.

M 26 boys rode to the beach. 17 boys walked to it. How many fewer boys walked to the beach than rode?

N Tom said his baby sister weighed 19 pounds. Mary said her little brother weighed 33 pounds. How much less did Tom's baby sister weigh than Mary's little brother?

THINK You know you subtract to find how much smaller one group is than another. You also subtract to find how much less one thing weighs than another.

O Dick had 53 shells. He gave away 9 of them. How many did he have left?

P Ann earns money by looking after small children at the wading pool. One week she earned $1.45. The next week she earned $1.65. How much did she earn in the two weeks?

Q After Ann put 75¢ in her bank, she counted the money in it. She had $5.05 in all. How much money was in her bank before she put in the 75¢?

R A sign on the beach said that the temperature of the water was 63 degrees, and the temperature of the air was 79 degrees. How much colder was the water than the air?
79 ~~~ 63 = ▢

Keeping skillful

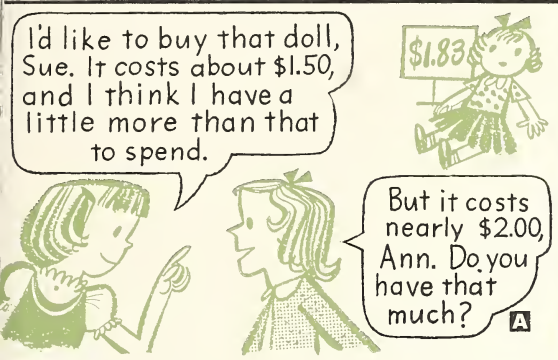
A 907 − 513 = ▢
B 228 + 640 + 388 = ▢
C 437 + ▢ = 700
D 365 − 72 = ▢
E 54 + 26 + 83 = ▢
F ▢ + 18 = 57
G 412 + 360 = ▢
H 5672 − 4863 = ▢
I 238 + ▢ = 571
J 56 + 293 + 154 = ▢
K ▢ + 35 = 60
L 5000 − 2635 = ▢
M 37 + 15 + 29 = ▢
N 800 + 250 = ▢
O 408 + 112 + 367 = ▢

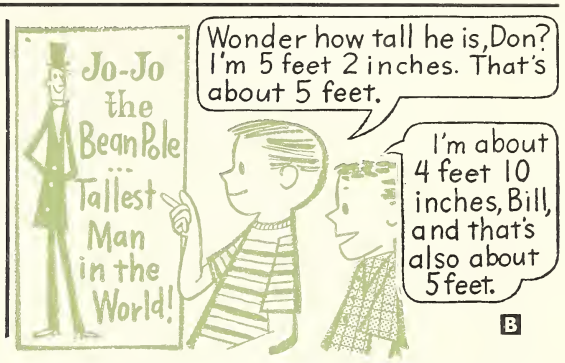
A 16 ÷ 4 = ▢
B 5 × 7 = ▢
C 8 × 3 = ▢
D 36 ÷ 6 = ▢
E 21 ÷ 7 = ▢
F 24 ÷ 3 = ▢
G 3 × 4 = ▢
H 8 × 2 = ▢
I 30 ÷ 5 = ▢
J 9 × 3 = ▢
K 4 × 8 = ▢
L 15 ÷ 5 = ▢
M 28 ÷ 4 = ▢
N 2 × 7 = ▢
O 36 ÷ 9 = ▢

A 4 yards = ▢ feet
B 21 days = ▢ weeks
C 6 pints = ▢ quarts
D 8 gallons = ▢ quarts
E 5 quarts = ▢ pints
F 18 feet = ▢ yards
G 28 quarts = ▢ gallons
H Which is longer, a stick 1 foot long or a stick 14 inches long?
I Which is more, 20 ounces of beans or a pound of beans?
J Does water freeze at 32° below 0° or 32° above 0°?

Thinking straight

Sometimes an answer that is not exact but is nearly correct will tell you all you need to know.


I'd like to buy that doll, Sue. It costs about $1.50, and I think I have a little more than that to spend.
$1.83
But it costs nearly $2.00, Ann. Do you have that much?
A


Jo-Jo the Bean Pole ... Tallest Man in the World!
Wonder how tall he is, Don? I'm 5 feet 2 inches. That's about 5 feet.
I'm about 4 feet 10 inches, Bill, and that's also about 5 feet.
B

A In Picture A, Sue rounded off the exact cost of the doll to the next dollar. What was wrong with the way Ann rounded off the cost of the doll?

B Why was Sue's way better?

C In Picture B, each boy rounded off his height to the nearest foot.
6 feet 2 inches to the nearest foot is ▒ feet.

D Is 10 feet 11 inches about 10 feet or about 11 feet?

E Is 4 feet 5 inches about 4 feet or about 5 feet?

F 380 children went to a school fair in the morning, and 517 children went to the fair in the afternoon. Ellen said, "In round numbers, 900 children went to the school fair." Was she correct?

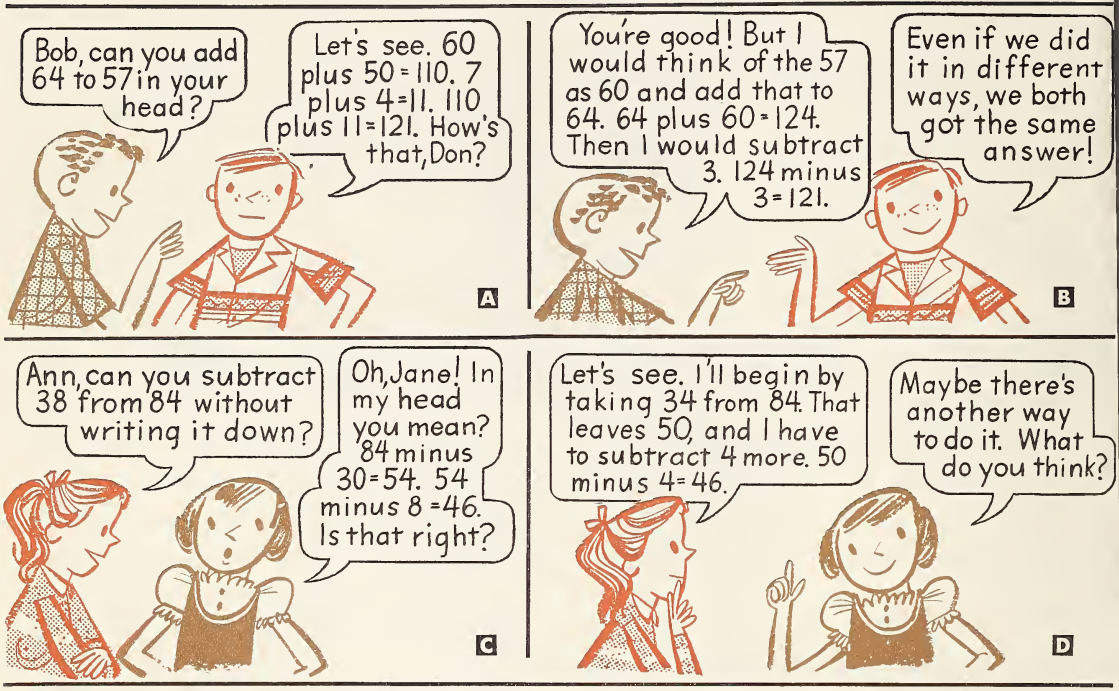
G Each of 48 boys and 36 girls bought an apple at the fair. Imagine that you are telling someone about how many apples they bought altogether. Which is the better round number to use, 80 apples or 100 apples?

H Mary bought 13 ounces of peanuts, and Don bought 14 ounces of peanuts. Why would it be wrong to say that they bought about 1 pound in all?

I The fourth graders earned $19.23, and the fifth graders earned $25.91. To the nearest dollar, how much did each grade earn? What other round numbers might you use for each amount?

J If you needed 2019 chairs for a show, which would be a better number to use when getting the chairs, 2050 chairs or 2000 chairs? Why?

Thinking straight


Bob, can you add 64 to 57 in your head?
Let's see. 60 plus 50 = 110. 7 plus 4 = 11. 110 plus 11 = 121. How's that, Don?
A
You're good! But I would think of the 57 as 60 and add that to 64. 64 plus 60 = 124. Then I would subtract 3. 124 minus 3 = 121.
Even if we did it in different ways, we both got the same answer!
B
Ann, can you subtract 38 from 84 without writing it down?
Oh, Jane! In my head you mean? 84 minus 30 = 54. 54 minus 8 = 46. Is that right?
C
Let's see. I'll begin by taking 34 from 84. That leaves 50, and I have to subtract 4 more. 50 minus 4 = 46.
Maybe there's another way to do it. What do you think?
D

A In Picture B, why did Don subtract 3?

B In Picture C, why did Ann subtract 8?

C In Picture D, why did Jane subtract 4? Can you think of another way to subtract 38 from 84?

Add in your head.

A	$26 + 62 =$ ▒	**E**	$52 + 78 =$ ▒
B	$17 + 96 =$ ▒	**F**	$45 + 95 =$ ▒
C	$91 + 20 =$ ▒	**G**	$81 + 33 =$ ▒
D	$69 + 47 =$ ▒	**H**	$84 + 33 =$ ▒

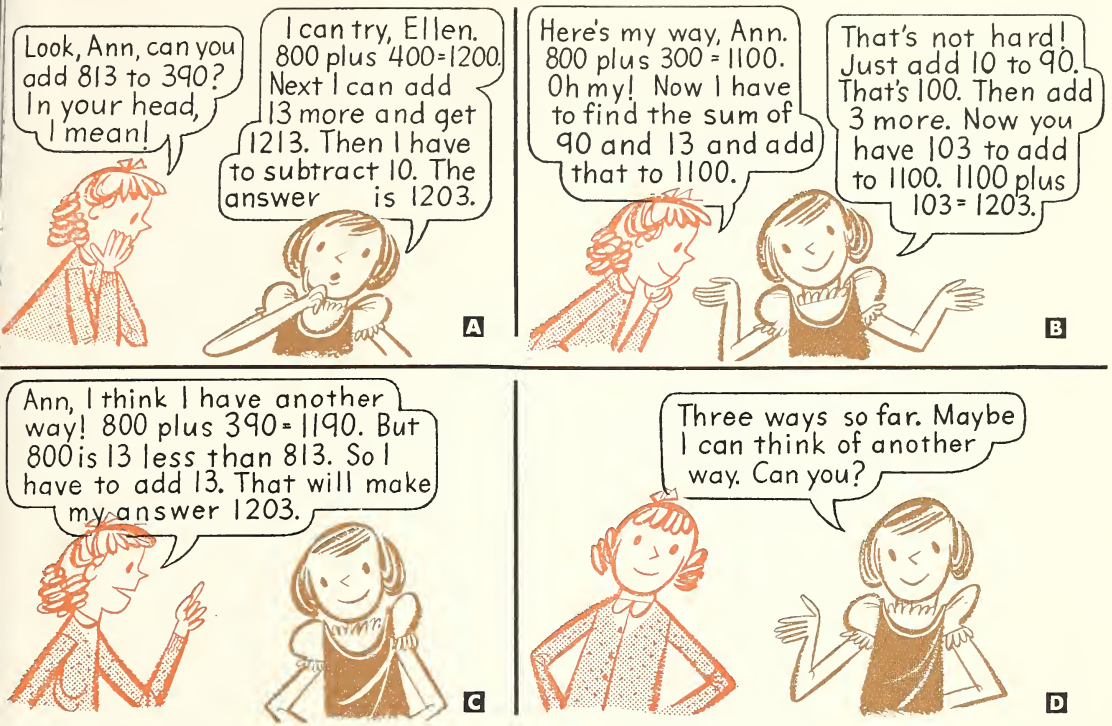
D How would you subtract 28 from 50 in your head? One way is to begin by subtracting 30 from 50. Then what would you have to do?

$50 - 30 = 20$ $\quad 20 \rightsquigarrow 2 =$ ▒

E Another way is to begin by subtracting 28 from 58. $58 - 28 =$ ▒. What would you do next?

Subtract in your head.

A	$92 - 43 =$ ▒	**E**	$50 - 27 =$ ▒
B	$71 - 64 =$ ▒	**F**	$96 - 42 =$ ▒
C	$86 - 15 =$ ▒	**G**	$79 - 68 =$ ▒
D	$35 - 14 =$ ▒	**H**	$63 - 39 =$ ▒


Look, Ann, can you add 813 to 390? In your head, I mean!
I can try, Ellen. 800 plus 400=1200. Next I can add 13 more and get 1213. Then I have to subtract 10. The answer is 1203.
A
Here's my way, Ann. 800 plus 300 = 1100. Oh my! Now I have to find the sum of 90 and 13 and add that to 1100.
That's not hard! Just add 10 to 90. That's 100. Then add 3 more. Now you have 103 to add to 1100. 1100 plus 103 = 1203.
B
Ann, I think I have another way! 800 plus 390 = 1190. But 800 is 13 less than 813. So I have to add 13. That will make my answer 1203.
C
Three ways so far. Maybe I can think of another way. Can you?
D

A In Picture A, why did Ann have to subtract 10?

B In Picture B, why did Ellen need to find the sum of 90 and 13? When Ann added 10 to 90, why did she have to add 3 more?

C Which of these 3 ways of finding the answer do you think would be easiest for you? Why?

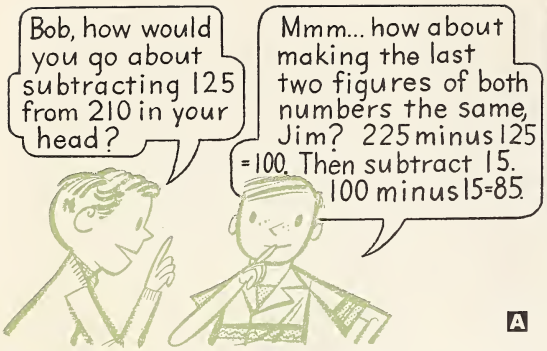
D How would you add 325 and 299 in your head? You might begin to add in this way: 325 + 300 = ▒. What would you do next?

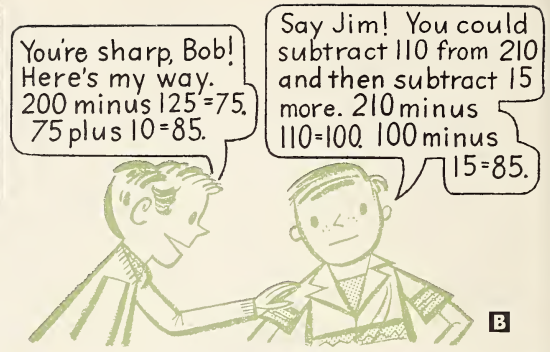
E Another way would be to add 299 to 300. 300 + 299 = ▒. What would you need to do next to find the answer?

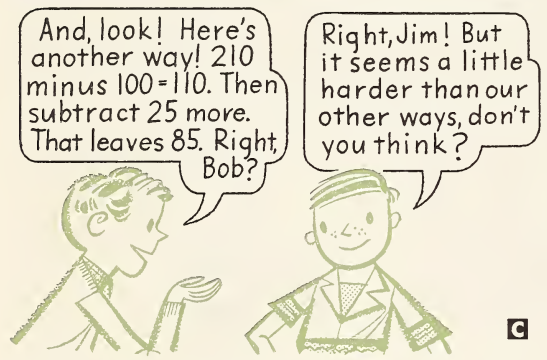
F Can you think of any other way to add 325 and 299?

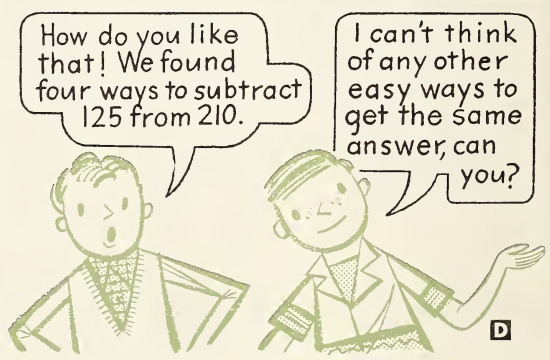
Add in your head.

A 190 + 150 = ▒	**E** 631 + 502 = ▒	**I** 890 + 692 = ▒
B 701 + 639 = ▒	**F** 319 + 290 = ▒	**J** 975 + 863 = ▒
C 545 + 275 = ▒	**G** 205 + 184 = ▒	**K** 806 + 747 = ▒
D 423 + 110 = ▒	**H** 852 + 330 = ▒	**L** 999 + 199 = ▒


Bob, how would you go about subtracting 125 from 210 in your head?
Mmm... how about making the last two figures of both numbers the same, Jim? 225 minus 125 = 100. Then subtract 15. 100 minus 15 = 85.
A


You're sharp, Bob! Here's my way. 200 minus 125 = 75. 75 plus 10 = 85.
Say Jim! You could subtract 110 from 210 and then subtract 15 more. 210 minus 110 = 100. 100 minus 15 = 85.
B


And, look! Here's another way! 210 minus 100 = 110. Then subtract 25 more. That leaves 85. Right, Bob?
Right, Jim! But it seems a little harder than our other ways, don't you think?
C


How do you like that! We found four ways to subtract 125 from 210.
I can't think of any other easy ways to get the same answer, can you?
D

A In Picture A, why did Bob subtract 15 from 100?

B In Picture B, why did Jim add 10 to 75? Is this way easier than the way Bob tried next? Why did Bob subtract 15 from 100?

C In Picture C, why did Jim subtract 100, not 125, from 210? Why did he next have to subtract 25 from 110?

D Without using a pencil, how would you subtract 259 from 407? Begin by subtracting 259 from 459.

E If you begin by subtracting 200 from 407, what will you do next?

F Another way is to round off both numbers like this: $400 - 260 = 140$. Now what must you do with the 7 in 407? Why should you next add 1?

Subtract in your head.

A $198 - 175 =$ ▒

B $470 - 363 =$ ▒

C $234 - 134 =$ ▒

D $570 - 441 =$ ▒

E $313 - 255 =$ ▒

F $726 - 518 =$ ▒

G $847 - 750 =$ ▒

H $689 - 512 =$ ▒

I $967 - 701 =$ ▒

J $690 - 426 =$ ▒

K $708 - 650 =$ ▒

L $986 - 847 =$ ▒

Using arithmetic

A The clerk at the pet store said that one fish tank would hold 9 gallons of water. This tank would hold how many quarts of water?

B When John was in the pet store, a man bought a bird for $7.85. He gave the clerk a ten-dollar bill. How much money should the clerk have given him?

C John bought one fish that cost $.35, another that cost $.22, and a third fish that cost $.40. How much did John spend for these three fish?

D Nancy came to the pet store, too. She bought a kitten for $7.50. She paid for it with a ten-dollar bill. How much money should the clerk have given her?

E Carol bought a basket for $2.75 and some cat food for $.40. How much in all did she pay for the basket and the cat food?

F Mary bought 4 small cans of cat food. Each can had 8 ounces of food in it. How many ounces of cat food did she buy altogether?

G Mary said that her cat eats 8 ounces of food at each meal. She feeds it two times a day. How many ounces of food does her cat eat each day?

H The 4 cans of cat food that Mary bought cost 36¢ in all. How much did each can cost?

I The clerk sold 3 snails to Don. The snails cost 8¢ apiece. How much did Don pay for the 3 snails?

J The clerk said that a can of dog food weighed 14 ounces. This was how much more or how much less than one pound?

K The clerk said that Nancy should give her kitten about 8 ounces of cat food each day. About how much cat food does she need to feed her kitten for 4 days?

L Dick bought some fish food for 19¢, some bird seed for 69¢, and some turtle food for 15¢. How much in all did these things cost?

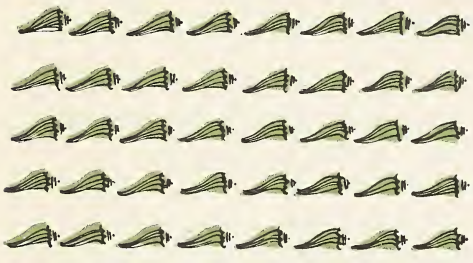
M Jim bought 2 small snails. He paid 16¢ for them. How much did the snails cost apiece?

N Jim also bought a dog collar that cost $1.35. He paid for the collar with 2 one-dollar bills. How much money should the clerk have given him?

O Ann had a quarter to spend. She wanted to buy a turtle that cost 38¢. How much more money did she need?

Moving forward

This lesson will show you how to multiply to make 40, 42, 45, 48, and 49.



There are 5 rows of 8 shells.
There are 5 eights.

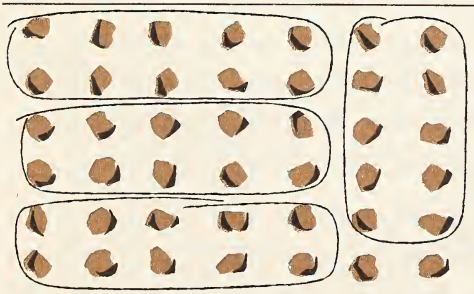
There are 8 rows of 5 shells.
There are 8 fives.

A

There are ▒ tens, or ▒ shells.

5 eights = ▒
8 fives = ▒
5 × 8 = ▒ 8 × 5 = ▒

B



There are 6 rows of 7 stones.
There are 6 sevens.

There are 7 rows of 6 stones.
There are 7 sixes.

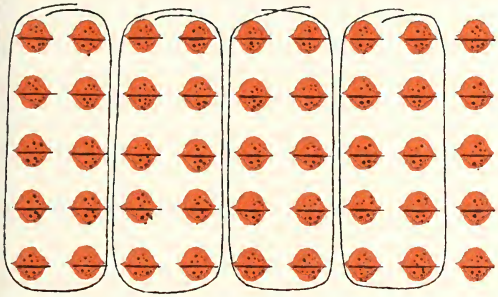
There are ▒ tens ▒ ones, or
▒ stones.

6 sevens = ▒
7 sixes = ▒
6 × 7 = ▒ 7 × 6 = ▒

There are 5 rows of 9 nuts.
There are 5 nines.

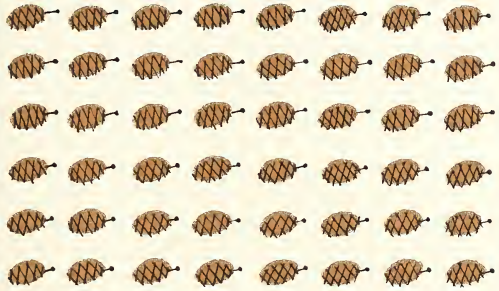
There are 9 rows of 5 nuts.
There are 9 fives.

C



There are ▒ tens ▒ ones, or
▒ nuts.

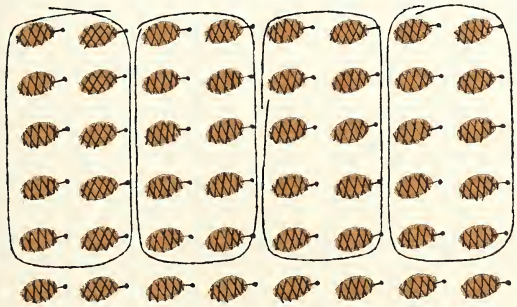
5 nines = ▒
9 fives = ▒
5 × 9 = ▒ 9 × 5 = ▒



There are 6 rows of 8 pine cones.
There are 6 eights.

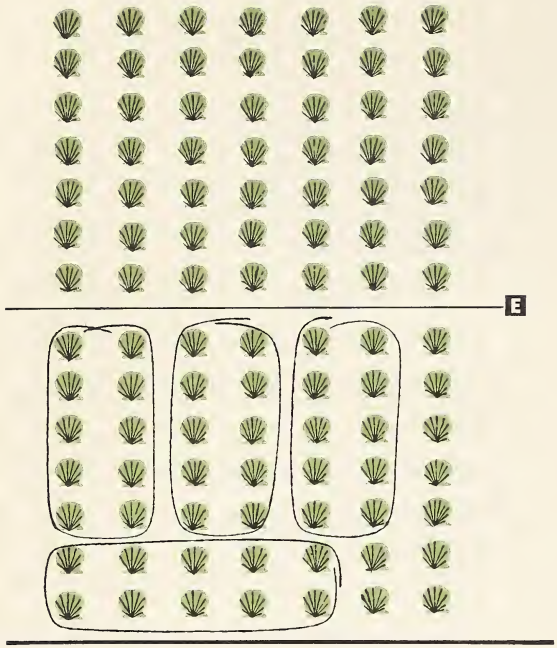
There are 8 rows of 6 pine cones.
There are 8 sixes.

D



There are ▒ tens ▒ ones, or
▒ pine cones.

6 eights = ▒
8 sixes = ▒
6 × 8 = ▒ 8 × 6 = ▒



There are 7 rows of 7 shells.
There are 7 sevens.

There are ▭ tens ▭ ones, or ▭ shells.

7 sevens = ▭
7 × 7 = ▭

A Jane gave 8 shells to each of 5 friends. How many shells in all did she give to her 5 friends?
5 × 8 = ▭

B David was saving money to buy animal pictures. He saved 7 cents a week for 7 weeks. How many cents did he save in the 7 weeks?
7 × 7 = ▭

C Carol put colored leaves in a book that had 8 pages. She put 6 leaves on each page. How many colored leaves did Carol put in this book?
8 × 6 = ▭

D Tom planted 9 rows of seeds in a box. He planted 5 seeds in each row. He planted how many seeds in all?
9 × 5 = ▭

A 6 × 8 = ▭
B 7 × 6 = ▭
C 5 × 9 = ▭
D 8 × 5 = ▭
E 7 × 7 = ▭

F 8 × 6 = ▭
G 6 × 7 = ▭
H 9 × 5 = ▭
I 5 × 8 = ▭

A Multiply 6 by 8.
B 7 sevens = ▭
C 6 multiplied by 7 = ▭
D Multiply 9 by 5.
E 5 multiplied by 8 = ▭

F 9 × 5 = ▭
G 5 × 8 = ▭
H 7 × 7 = ▭
I 6 × 7 = ▭
J 8 × 5 = ▭

Now you should be able to multiply to make 40, 42, 45, 48, and 49.

Moving forward

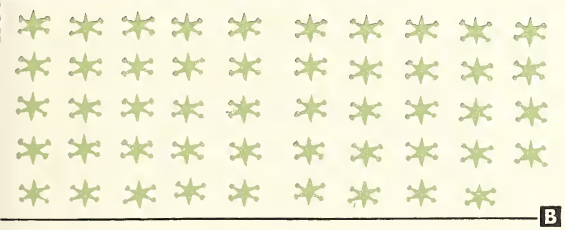
This lesson will show you how to divide the numbers 40, 42, 45, 48, and 49.

There are 40 bells in all.

A

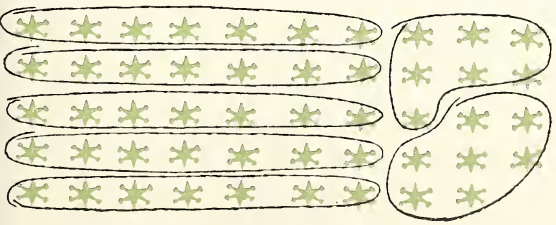
The 40 bells are divided into groups of ▭.
There are ▭ groups of 8.
$40 \div 8 = \square$

Now the 40 bells are divided into groups of ▭.
There are ▭ groups of 5.
$40 \div 5 = \square$

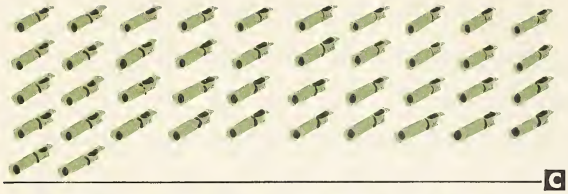


There are 49 jacks in all.

B

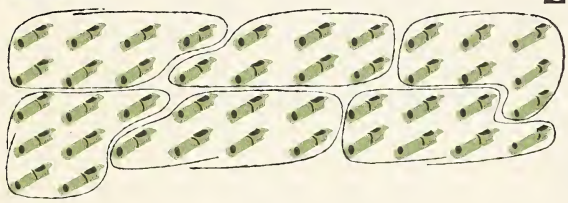


The 49 jacks are divided into groups of ▭.
There are ▭ groups of 7.
$49 \div 7 = \square$

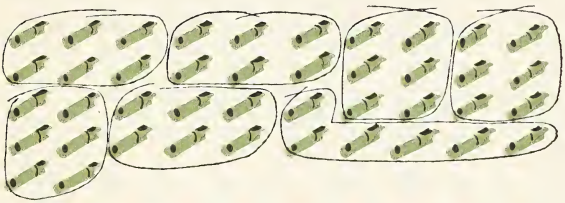


There are 42 whistles in all.

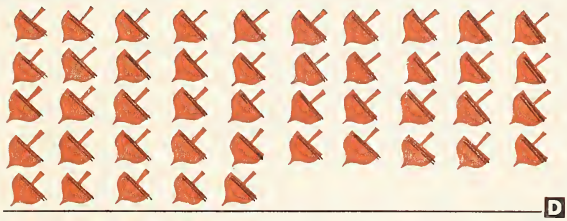
C



The 42 whistles are divided into groups of ▒.
There are ▒ groups of 7.
42 ÷ 7 = ▒

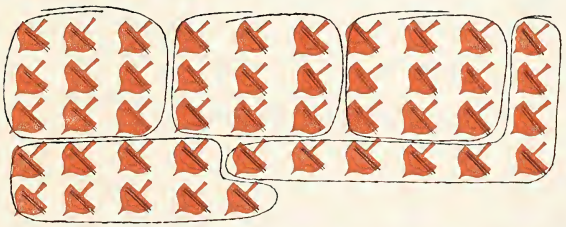


Now the 42 whistles are divided into groups of ▒.
There are ▒ groups of 6.
42 ÷ 6 = ▒

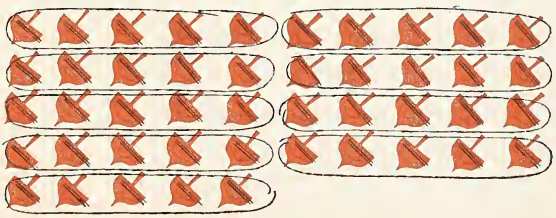


There are 45 tops in all.

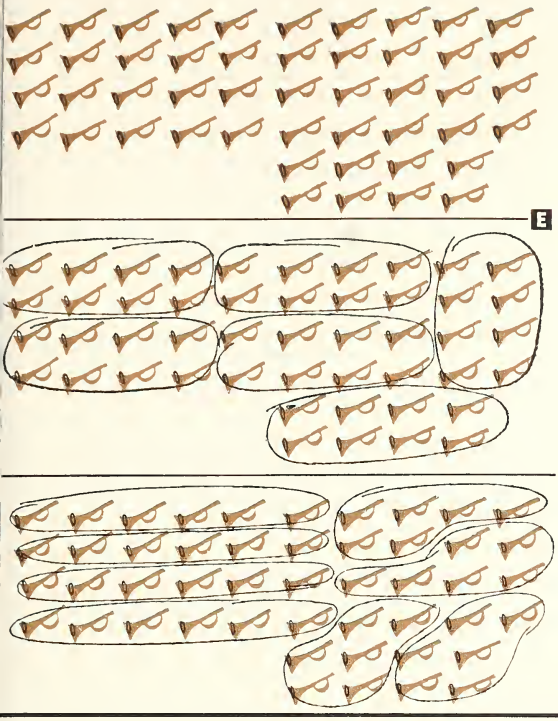
D



The 45 tops are divided into groups of ▒.
There are ▒ groups of 9.
45 ÷ 9 = ▒



Now the 45 tops are divided into groups of ▒.
There are ▒ groups of 5.
45 ÷ 5 = ▒



There are 48 horns in all.

E

The 48 horns are divided into groups of ▒.
There are ▒ groups of 8.
48 ÷ 8 = ▒

Now the 48 horns are divided into groups of ▒.
There are ▒ groups of 6.
48 ÷ 6 = ▒

A Ellen bought 42 shells to make shell pictures. She used 6 shells for each picture. She made how many pictures?
42 ÷ 6 = ▒

B Sue bought 48 flowers. She divided them into bunches of 8. How many bunches of flowers did she make?
48 ÷ 8 = ▒

C Jim had 45¢. The tablets that he wanted cost 9¢ each. How many tablets could he have bought with his 45¢?
45 ÷ 9 = ▒

D John spent 40¢ for some balloons. The balloons cost 5¢ each. How many balloons did John buy?
40 ÷ 5 = ▒

A 45 ÷ 9 = ▒
B 48 ÷ 8 = ▒
C 40 ÷ 5 = ▒
D 42 ÷ 6 = ▒
E 49 ÷ 7 = ▒
F 40 ÷ 8 = ▒
G 48 ÷ 6 = ▒
H 45 ÷ 5 = ▒
I 42 ÷ 7 = ▒

A Divide 49 by 7.
B 42 divided by 7 = ▒
C Divide 40 by 8.
D 48 divided by 6 = ▒
E Divide 45 by 5.
F 48 ÷ 8 = ▒
G 40 ÷ 5 = ▒
H 45 ÷ 9 = ▒
I 42 ÷ 6 = ▒
J 49 ÷ 7 = ▒

Now you can divide 40, 42, 45, 48, and 49.

Keeping skillful

For each of these problems draw the coins or bills that you would give in making change. Under each coin or bill write the number you would say as you make the change.

A Ann bought an apple for 7¢. She gave the clerk a quarter.

B Don bought a dozen oranges for 49¢. He gave the clerk a quarter and 3 dimes.

C Tony bought a box of candy that cost 55 cents. He gave the clerk a dollar bill.

D Carol bought 29¢ worth of bananas. She gave the clerk a half dollar.

E Bob's mother bought a chicken that cost $4.52. She gave the clerk a 10-dollar bill.

F Jim gave the clerk a 5-dollar bill to pay for groceries that cost $3.21.

G Mary gave the clerk a dollar bill and 2 quarters to pay for a basket of peaches that cost $1.38.

H Dick gave the clerk two 1-dollar bills to pay for a basket of apples that cost $1.65.

Write with numerals.

A eighteen dollars and thirty-five cents

B ten dollars and sixteen cents

C nine cents

D three dollars and forty cents

E twenty-five dollars and seven cents

F eight dollars

G seventy-three cents

H fifty cents

I thirty-one dollars and seventy-nine cents

J eighty-two dollars and five cents

A $\square + 28 = 41$

B $702 - 138 = \square$

C $86 + \square = 100$

D $19 + 310 = \square$

E $2373 - 1839 = \square$

F $69 + 77 = \square$

G $\square + 11 = 35$

H $73 - 39 = \square$

I $18 + \square = 65$

J $\square + 54 = 108$

K $44 + 26 = \square$

L $1039 - 872 = \square$

M $9 + \square = 48$

N $554 - 176 = \square$

O $\square + 90 = 143$

P $5830 - 3056 = \square$

Q $853 + 167 = \square$

A $1726 - 402 = \square$

B $72 + \square = 91$

C $498 + 326 = \square$

D $\square + 77 = 893$

E $825 - 469 = \square$

F $326 + \square = 618$

G $\square + 38 = 145$

H $508 - 429 = \square$

I $57 + \square = 203$

J $63 + 78 = \square$

K $\square + 111 = 1200$

L $84 + \square = 123$

M $600 - 144 = \square$

N $185 + \square = 400$

O $658 + 709 = \square$

P $\square + 84 = 134$

Q $2700 - 1258 = \square$

Side trip

Measurement words, such as inch, pound, or quart, are often written in a shorter way. These short ways of writing words are called abbreviations.

inch or inches—in.
foot or feet—ft.
yard or yards—yd.

ounce or ounces—oz.
pound or pounds—lb.

pint or pints—pt.
quart or quarts—qt.
gallon or gallons—gal.

second or seconds—sec.
minute or minutes—min.
hour or hours—hr.

day or days—da.
week or weeks—wk.
month or months—mo.
year or years—yr.

dozen—doz.

12 in. = 1 ft.
3 ft. = 1 yd.
36 in. = 1 yd.

12 things = 1 doz.

2 pt. = 1 qt.
4 qt. = 1 gal.
8 pt. = 1 gal.

16 oz. = 1 lb.

7 da. = 1 wk.
52 wk. = 1 yr.
12 mo. = 1 yr.
365 da. = 1 yr.

60 sec. = 1 min.
60 min. = 1 hr.
24 hr. = 1 da.

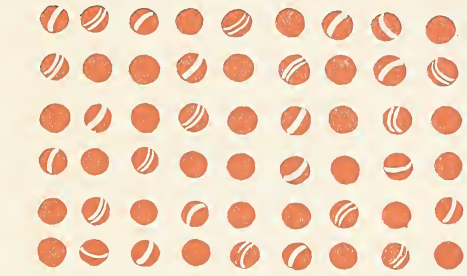
A 1 min. = ▒ sec.
B 1 gal. = ▒ pt.
C 1 yr. = ▒ wk.
D 36 in. = ▒ yd.
E 24 hr. = ▒ da.
F 1 lb. = ▒ oz.
G 1 ft. = ▒ in.
H 2 pt. = ▒ qt.
I 1 wk. = ▒ da.
J 60 min. = ▒ hr.
K 1 yd. = ▒ ft.
L 12 mo. = ▒ yr.
M 1 gal. = ▒ qt.
N 1 yr. = ▒ da.

A 4 gal. = ▒ pt.
B 49 da. = ▒ wk.
C 1 yr. 28 da. = ▒ da.
D 26 oz. = ▒ lb. ▒ oz.
E 1 min. 14 sec. = ▒ sec.
F 24 ft. = ▒ yd.
G 15 mo. = ▒ yr. ▒ mo.
H 1 gal. 3 qt. = ▒ qt.
I 40 pt. = ▒ gal.
J 1 yr. 12 wk. = ▒ wk.
K 1 lb. 11 oz. = ▒ oz.
L 1 hr. 33 min. = ▒ min.
M 1 doz. = ▒ things
N 90 min. = 1 hr. ▒ min.

A 36 qt. = ▒ gal.
B 1 ft. 9 in. = ▒ in.
C 1 da. 13 hr. = ▒ hr.
D 27 hr. = ▒ da. ▒ hr.
E 1 yr. 5 mo. = ▒ mo.
F 398 da. = ▒ yr. ▒ da.
G 78 wk. = ▒ yr. ▒ wk.
H 86 sec. = ▒ min. ▒ sec.
I 75 min. = ▒ hr. ▒ min.
J 21 in. = ▒ ft. ▒ in.
K 6 wk. = ▒ da.
L 1 yr. 11 mo. = ▒ mo.
M 31 oz. = ▒ lb. ▒ oz.
N 1 gal. 7 pt. = ▒ pt.

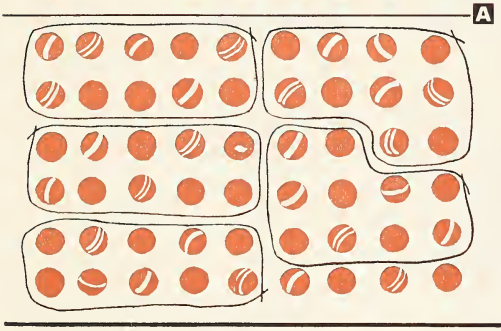
Moving forward

In this lesson you will learn how to multiply to make 54, 56, 63, 64, 72, and 81.



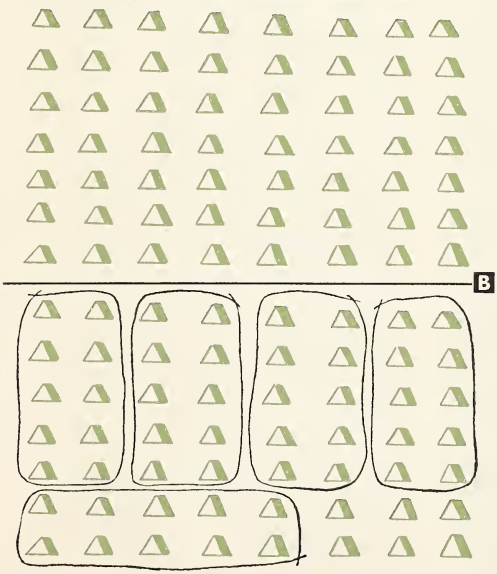
There are 6 rows of 9 balls.
There are 6 nines.

There are 9 rows of 6 balls.
There are 9 sixes.



There are ▭ tens ▭ ones, or ▭ balls.

6 nines = ▭
9 sixes = ▭
6 × 9 = ▭ 9 × 6 = ▭

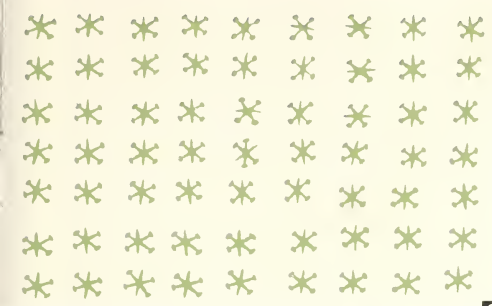


There are 7 rows of 8 blocks.
There are 7 eights.

There are 8 rows of 7 blocks.
There are 8 sevens.

There are ▭ tens ▭ ones, or ▭ blocks.

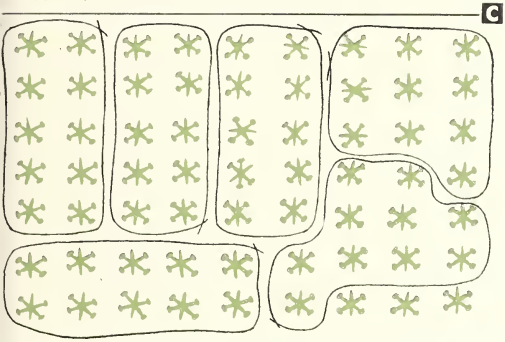
7 eights = ▭
8 sevens = ▭
7 × 8 = ▭ 8 × 7 = ▭



There are 7 rows of 9 jacks.
There are 7 nines.

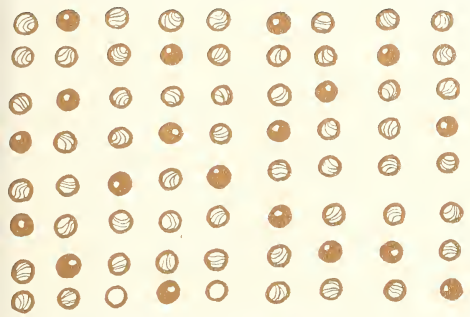
There are 9 rows of 7 jacks.
There are 9 sevens.

C



There are ▭ tens ▭ ones, or ▭ jacks.

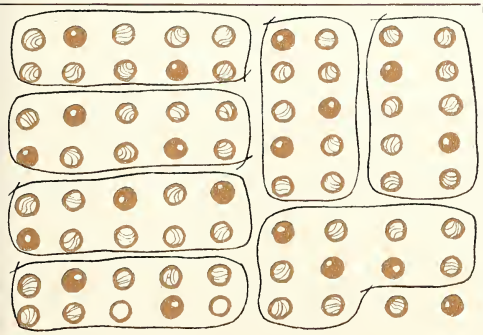
7 nines = ▭
9 sevens = ▭
7 × 9 = ▭ 9 × 7 = ▭



There are 8 rows of 9 marbles.
There are 8 nines.

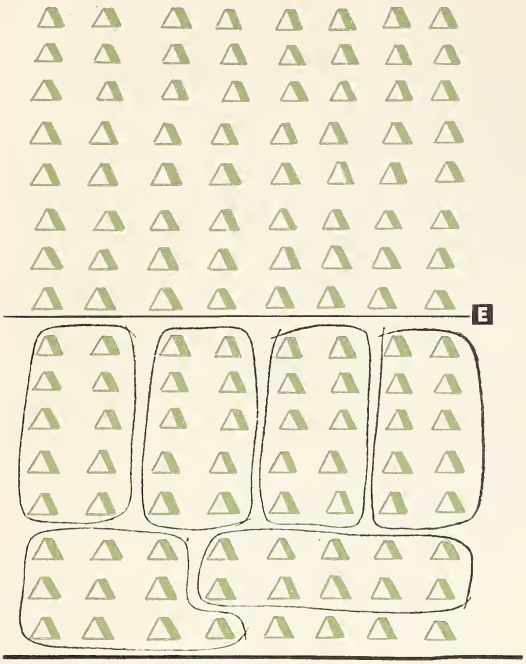
There are 9 rows of 8 marbles.
There are 9 eights.

D



There are ▭ tens ▭ ones, or
▭ marbles.

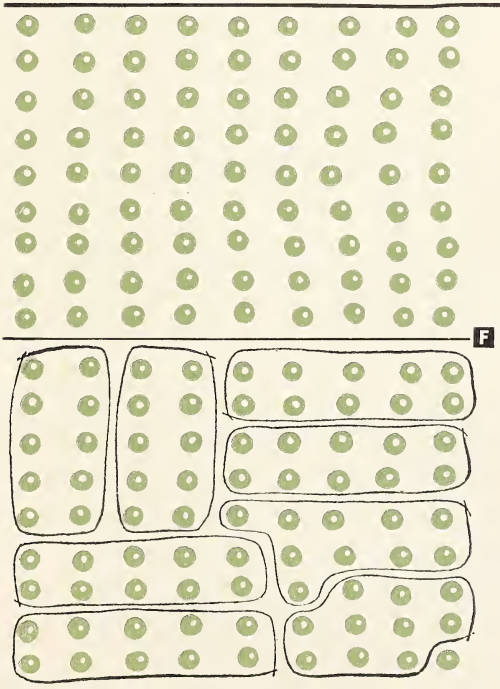
8 nines = ▭
9 eights = ▭
8 × 9 = ▭ 9 × 8 = ▭



There are 8 rows of 8 blocks.
There are 8 eights.

There are ___ tens ___ ones, or ___ blocks.

8 eights = ___
8 × 8 = ___



There are 9 rows of 9 marbles.
There are 9 nines.

There are ___ tens ___ one, or ___ marbles.

9 nines = ___
9 × 9 = ___

A Jim said to his mother, "It is exactly 8 weeks until my birthday. That is the same as 56 days." Was Jim right?
$8 \times 7 = \square$

B Nancy bought 8 packages of paper cups. There were 8 cups in a package. There were how many cups in all?
$8 \times 8 = \square$

C Tom bought 9 bags of small toys for a party. There were 6 toys in each bag. There were how many toys in all?
$9 \times 6 = \square$

D Tom also bought 7 small prizes for the party. The prizes cost 9¢ each. They cost how much in all?
$7 \times 9 = \square$

A $9 \times 7 = \square$
B $6 \times 9 = \square$
C $7 \times 8 = \square$
D $9 \times 8 = \square$
E $8 \times 8 = \square$
F $7 \times 9 = \square$
G $8 \times 7 = \square$
H $9 \times 6 = \square$
I $8 \times 9 = \square$
J $9 \times 9 = \square$

A Multiply 9 by 8.
B 8 multiplied by $7 = \square$
C 9 times $9 = \square$
D Multiply 8 by 8.
E 6 nines $= \square$

F $9 \times 6 = \square$
G $7 \times 9 = \square$
H $8 \times 7 = \square$
I $9 \times 8 = \square$
J $9 \times 7 = \square$

Now you should be able to multiply to make 54, 56, 63, 64, 72, and 81.

Keeping skillful

A In 8620, the figure $\square$ is in hundreds' place.

B In 2473, the figure 7 is in what place?

C In 908, the figure $\square$ is in ones' place.

D In 2531, the figure 2 is in what place?

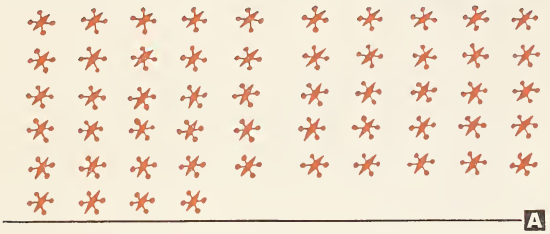
E In 6310, the figure $\square$ is in thousands' place.

A $5 \times 4 = \square$
B $3 \times 3 = \square$
C $6 \times 7 = \square$
D $6 \times 3 = \square$
E $5 \times 5 = \square$
F $8 \times 6 = \square$
G $7 \times 9 = \square$
H $6 \times 6 = \square$
I $8 \times 7 = \square$
J $9 \times 9 = \square$
K $4 \times 9 = \square$
L $7 \times 7 = \square$

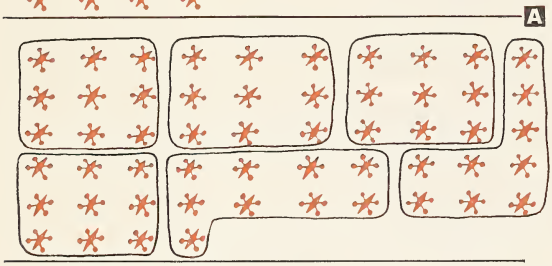
A $\$.72 + \$.41 + \$.89 = \square$
B $\$2.65 + \square = \$5.08$
C $486 + 527 = \square$
D $2470 - 1547 = \square$
E $\$8.14 - \$1.25 = \square$
F $54 + 18 + 73 = \square$
G $639 - 584 = \square$
H $\square + 216 = 709$
I $83¢ + 50¢ + 67¢ = \square$
J $654 + 386 + 117 = \square$
K $5000 - 3214 = \square$
L $\$4.63 + \square = \$8.00$

Moving forward

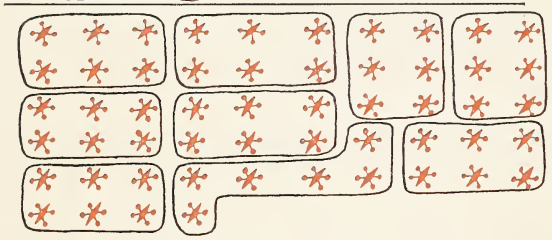
This lesson will show you how to divide the numbers 54, 56, 63, 64, 72, and 81.



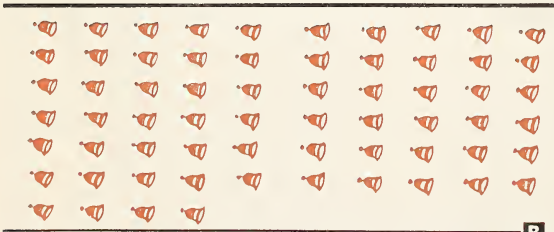
There are 54 jacks in all.



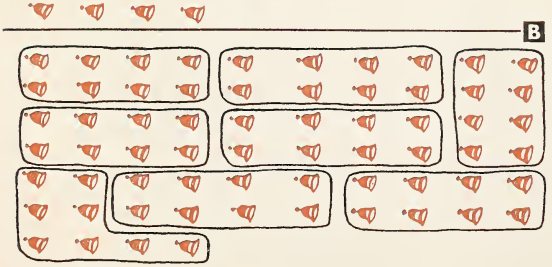
The 54 jacks are divided into groups of ▭.
There are ▭ groups of 9.
$54 \div 9 = \square$



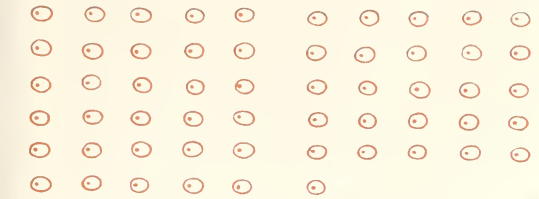
Now the 54 jacks are divided into groups of ▭.
There are ▭ groups of 6.
$54 \div 6 = \square$



There are 64 bells in all.

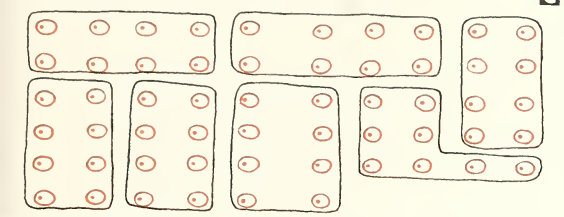


The 64 bells are divided into groups of ▭.
There are ▭ groups of 8.
$64 \div 8 = \square$

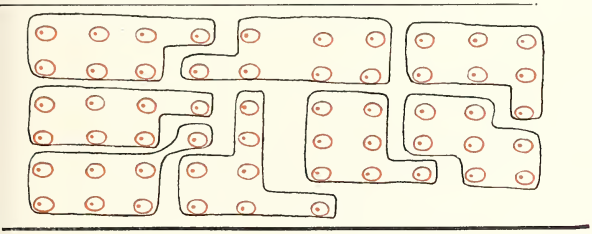


There are 56 beads in all.

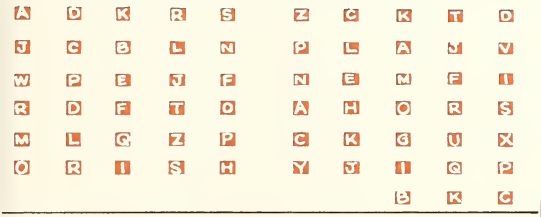
C



The 56 beads are divided into groups of ▒.
There are ▒ groups of 8.
56 ÷ 8 = ▒

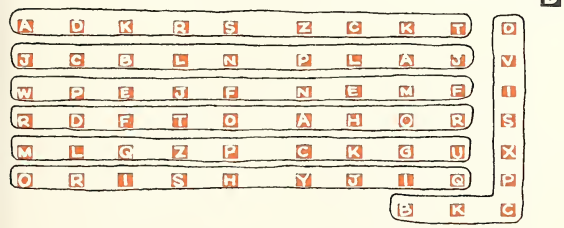


Now the 56 beads are divided into groups of ▒.
There are ▒ groups of 7.
56 ÷ 7 = ▒

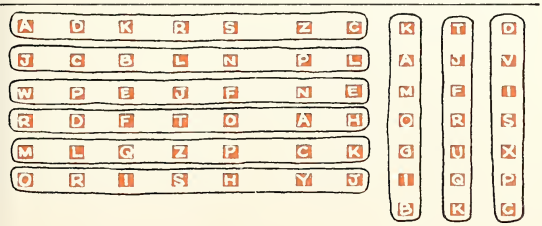


There are 63 blocks in all.

D



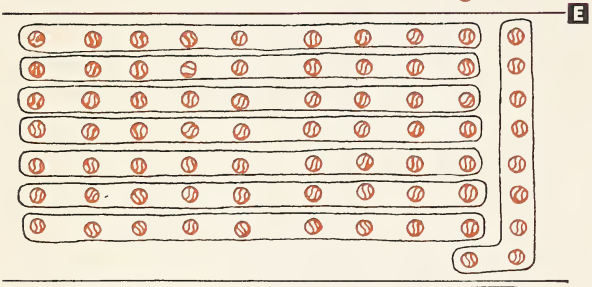
The 63 blocks are divided into groups of ▒.
There are ▒ groups of 9.
63 ÷ 9 = ▒



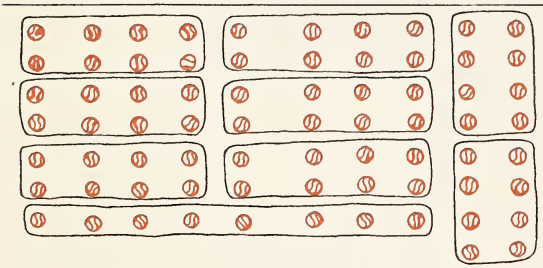
Now the 63 blocks are divided into groups of ▒.
There are ▒ groups of 7.
63 ÷ 7 = ▒

There are 72 marbles in all.

E



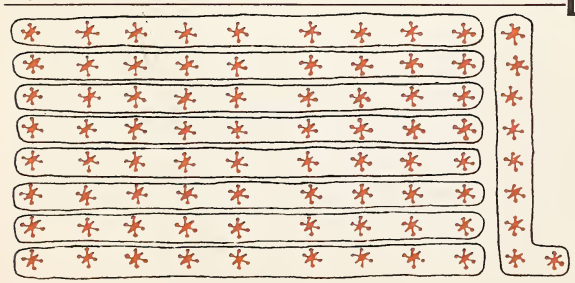
The 72 marbles are divided into groups of ▒.
There are ▒ groups of 9.
72 ÷ 9 = ▒



Now the 72 marbles are divided into groups of ▒.
There are ▒ groups of 8.
72 ÷ 8 = ▒

There are 81 jacks in all.

F



The 81 jacks are divided into groups of ▒.
There are ▒ groups of 9.
81 ÷ 9 = ▒

A A clerk in the toy store put 54 toys into bags to make surprise packages. He put 6 toys into each bag. How many surprise packages of 6 toys did he make?
$54 \div 6 =$ ▒

B He also made bunches of balloons. He had 81 balloons. He put 9 balloons in each bunch. How many bunches did he make?
$81 \div 9 =$ ▒

C Another clerk put 72 small horns into boxes. He put 8 horns into each box. How many boxes did the clerk need for the 72 horns?

D Tom bought 45¢ worth of small toys. Each of these toys cost 5¢. How many of these toys did Tom buy?

E Mary bought 56¢ worth of paper dolls. Each paper doll cost 8¢. How many paper dolls did she buy?

A	$63 \div 7 =$ ▒	**F**	$56 \div 7 =$ ▒	**A**	Divide 63 by 9.	**F**	$42 \div 6 =$ ▒
B	$72 \div 8 =$ ▒	**G**	$72 \div 9 =$ ▒	**B**	56 divided by 7 = ▒	**G**	$30 \div 5 =$ ▒
C	$54 \div 9 =$ ▒	**H**	$54 \div 6 =$ ▒	**C**	Divide 54 by 9.	**H**	$49 \div 7 =$ ▒
D	$56 \div 8 =$ ▒	**I**	$63 \div 9 =$ ▒	**D**	63 divided by 7 = ▒	**I**	$45 \div 9 =$ ▒
E	$81 \div 9 =$ ▒	**J**	$64 \div 8 =$ ▒	**E**	Divide 72 by 9.	**J**	$48 \div 6 =$ ▒

Now you should be able to divide the numbers 54, 56, 63, 64, 72, and 81.

Checking up

Test 1

A	$6 \times 8 =$ ▒	**K**	$8 \times 9 =$ ▒
B	$5 \times 9 =$ ▒	**L**	$8 \times 7 =$ ▒
C	$7 \times 7 =$ ▒	**M**	$7 \times 9 =$ ▒
D	$5 \times 8 =$ ▒	**N**	$9 \times 6 =$ ▒
E	$7 \times 6 =$ ▒	**O**	$7 \times 8 =$ ▒
F	$9 \times 5 =$ ▒	**P**	$9 \times 7 =$ ▒
G	$8 \times 6 =$ ▒	**Q**	$9 \times 8 =$ ▒
H	$6 \times 7 =$ ▒	**R**	$6 \times 9 =$ ▒
I	$8 \times 5 =$ ▒	**S**	$9 \times 9 =$ ▒
J	$6 \times 9 =$ ▒	**T**	$8 \times 8 =$ ▒

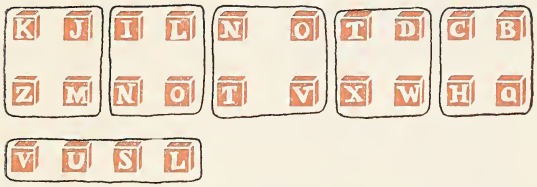
Test 2

A	$45 \div 9 =$ ▒	**K**	$64 \div 8 =$ ▒
B	$42 \div 7 =$ ▒	**L**	$54 \div 9 =$ ▒
C	$54 \div 6 =$ ▒	**M**	$72 \div 9 =$ ▒
D	$40 \div 5 =$ ▒	**N**	$81 \div 9 =$ ▒
E	$49 \div 7 =$ ▒	**O**	$63 \div 9 =$ ▒
F	$45 \div 5 =$ ▒	**P**	$56 \div 7 =$ ▒
G	$40 \div 8 =$ ▒	**Q**	$72 \div 8 =$ ▒
H	$48 \div 6 =$ ▒	**R**	$63 \div 7 =$ ▒
I	$42 \div 6 =$ ▒	**S**	$81 \div 9 =$ ▒
J	$48 \div 8 =$ ▒	**T**	$56 \div 8 =$ ▒

Moving forward

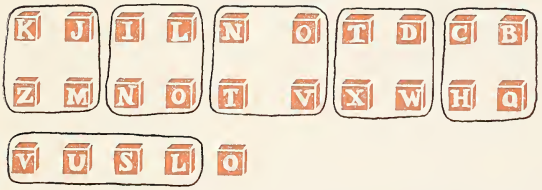
This lesson will teach you how to divide when you have something left over.

A



Put the 24 blocks in groups of 4.
There are ▒ groups of 4.
24 ÷ 4 = ▒

B

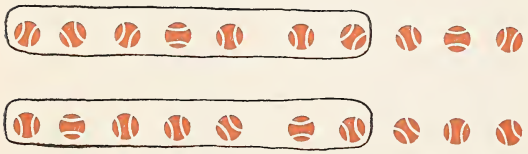


Put the 25 blocks in groups of 4.
There are ▒ groups of 4.
Are any blocks left over?
The 1 block left over is called the remainder.
25 ÷ 4 = 6 and 1 remainder

C

Put the 33 tops in groups of 6.
There are ▒ groups of 6.
Are any tops left over?
33 ÷ 6 = ▒ and ▒ remainder

D



Put the 20 balls in groups of 7.
There are ▒ groups of 7.
Are any balls left over?
20 ÷ 7 = ▒ and ▒ remainder

A Which numbers can be divided by 4 without a remainder?
28 29 30 31 32 33 34 35 36

B Which numbers can be divided by 5 without a remainder?
14 15 16 17 18 19 20 21 22

C Which numbers can be divided by 6 without a remainder?
36 37 38 39 40 41 42 43 44

D Which numbers can be divided by 2 without a remainder?
13 16 9 4 8 11 17 14 5 6

E Which numbers can be divided by 3 without a remainder?
6 10 14 18 9 13 12 4 28

F Which numbers can be divided by 4 without a remainder?
29 20 8 6 16 11 24 28 31

G Which numbers can be divided by 7 without a remainder?
28 21 40 25 14 34 49 43 56

H Which numbers can be divided by 8 without a remainder?
40 18 37 32 48 20 36 56 64

I Which numbers can be divided by 9 without a remainder?
32 45 27 50 39 40 51 60 63

A Is there a remainder when you divide 26 by 4?

B Is there a remainder when you divide 73 by 8?

C Is there a remainder when you divide 43 by 5?

D Is there a remainder when you divide 11 by 3?

E Is there a remainder when you divide 81 by 9?

F Is there a remainder when you divide 56 by 6?

G Is there a remainder when you divide 45 by 8?

H Is there a remainder when you divide 63 by 7?

A $28 \div 5 =$ ▒ and ▒ remainder
B $51 \div 7 =$ ▒ and ▒ remainder
C $15 \div 2 =$ ▒ and ▒ remainder
D $39 \div 8 =$ ▒ and ▒ remainder
E $46 \div 9 =$ ▒ and ▒ remainder
F $38 \div 4 =$ ▒ and ▒ remainder
G $14 \div 3 =$ ▒ and ▒ remainder
H $11 \div 2 =$ ▒ and ▒ remainder
I $52 \div 6 =$ ▒ and ▒ remainder
J $79 \div 9 =$ ▒ and ▒ remainder
K $36 \div 5 =$ ▒ and ▒ remainder
L $50 \div 8 =$ ▒ and ▒ remainder
M $26 \div 4 =$ ▒ and ▒ remainder
N $38 \div 7 =$ ▒ and ▒ remainder

Now you should know how to divide when there is a remainder.

Exploring problems

see

A

Bob, Dick, and John are going to share 24 stamps. Each boy is going to get the same number of stamps. How many stamps will each boy get?

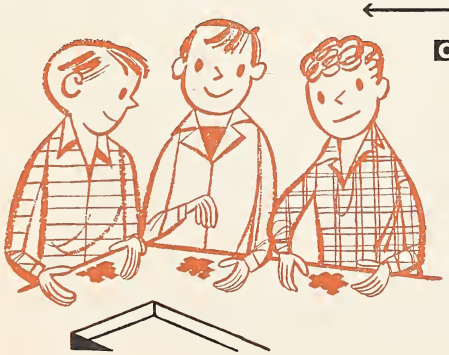
There are 24 stamps in all.

24 — Number of stamps in all

B

The boys are dividing the stamps into equal groups. You do not know how many stamps there will be in each group.

$24 \div \square$ — Number of stamps in each group



C

There will be as many equal groups of stamps as there are boys. You know that there will be 3 equal groups of stamps.

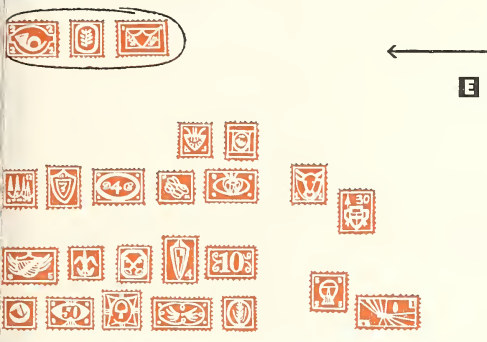
$24 \div \square = 3$ — Number of equal groups of stamps

You must find this number.

compute

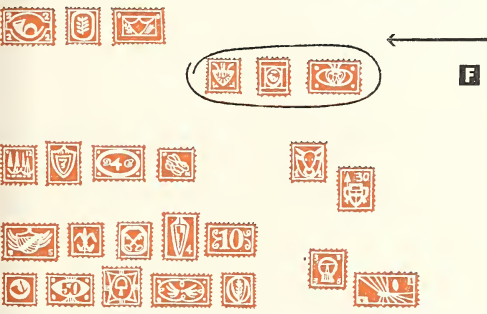
D

There are 24 stamps in all.



E

Now each boy has taken 1 stamp. The boys have taken a group of 3 stamps.



F

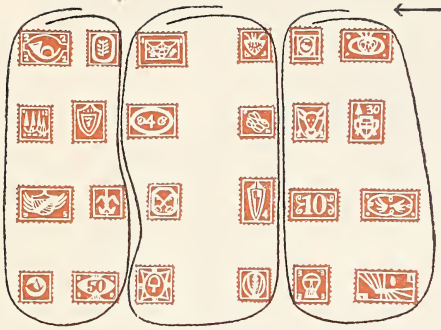
Each boy has taken another stamp. They have taken another group of 3 stamps.

G

Now the boys have finished sharing the stamps. Each time the boys took 1 stamp apiece, they took a group of 3 stamps. You can think of the 24 stamps as divided into groups of 3.

24 divided by 3 = 8

Now turn the page.

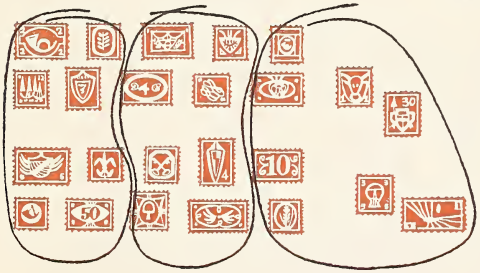


Each boy has taken 8 stamps.

H

$24 \div \square = 3$

You now know that to find this number you divide 24 by 3.



I

$24 \div \square = 3$

This number is 8, because the stamps are divided into groups of 8.

Each boy will get 8 stamps.

A Four girls shared 32 flower postcards equally. How many flower postcards did each girl get?

$32 \div \square = 4$

Number in all.

Number in each group.

Number of equal groups.

You must find this number.

Divide 32 by 4.

Each girl got ▢ flower postcards.

B Peggy paid 48¢ for 8 cupcakes. The cupcakes cost how many cents apiece?

THINK 48¢ = how many pennies? How many equal groups of pennies did Peggy spend? Find how many pennies there were in each group.

$48 \div \square = 8$ Divide 48 by 8.

C David paid 25¢ for 5 tickets to a movie at school. The tickets cost how many cents apiece?

$25 \div \square = 5$ Divide 25 by 5.

D Jim has 3 plant boxes in his window garden. He has 15 plants. He wants to put the same number of plants in each box. How many plants should he put in each box?

E Ann's mother made 16 cupcakes. 4 persons shared them equally. How many cupcakes did each person get?

F Nancy paid 42¢ for 6 yards of ribbon. How many cents a yard did the ribbon cost?

G Carol bought 3 spools of ribbon. Each spool had 9 yards of ribbon on it. How many yards of ribbon did Carol buy?

H Ellen and five of her friends had a picnic in the yard. They had 18 sandwiches. If they shared them equally, how many sandwiches did each of the 6 girls get?

I Four girls bought a box of popcorn for the picnic. They paid 36¢ for it and shared the cost equally. How much did each girl pay?

J David had 56 baseball cards. He shared them equally with 6 other boys. How many baseball cards did each of the 7 boys get?

K Tony gave 15 of his old magazines to 5 boys. He gave each boy the same number of magazines. How many magazines did each boy get?

L Mary had 3 vases and 27 flowers. She put the same number of flowers in each vase. How many flowers did she put in each vase?

M Jack bought 40 hamburger buns for a picnic. The buns were sold in packages of 8. How many packages of buns did Jack buy?

Now you should be able to find how large the equal groups are when you know the number of things in all and the number of equal groups.

Keeping skillful

A $63 \div \square = 7$	**F** $54 \div \square = 6$	**A** $49 \div 7 = \square$	**F** $36 \div \square = 9$
B $42 \div \square = 6$	**G** $56 \div \square = 8$	**B** $63 \div \square = 9$	**G** $72 \div \square = 8$
C $72 \div \square = 9$	**H** $48 \div \square = 6$	**C** $45 \div \square = 5$	**H** $54 \div 9 = \square$
D $40 \div \square = 5$	**I** $35 \div \square = 5$	**D** $56 \div 7 = \square$	**I** $42 \div \square = 7$
E $64 \div \square = 8$	**J** $81 \div \square = 9$	**E** $40 \div 8 = \square$	**J** $45 \div 9 = \square$

Checking up

Test 1

A Bob had 5 snails and 13 goldfish. He had how many fewer snails than goldfish?

B Dick had 12 snails. He gave 3 of them to Tom. How many snails did Dick have left?

C May had some plants in a window box. Her mother gave her 3 more plants. Then she had 7 plants. How many plants did May have to begin with?

D Jane had 4 plants in a window box. She put 8 more plants in the box. How many plants were in the box then?

E The children in the science class planted the same number of bean seeds in each of 4 boxes. They had 24 beans. They planted how many beans in each box?

F Ann sold 7 old magazines to friends for 2¢ apiece. She got how much in all for the magazines?

G Carol spent 40¢ for paper dolls. The dolls cost 5¢ apiece. How many paper dolls did Carol buy?

H John made 2 model cars on Friday. On Saturday he finished some more. Then he had 11 model cars. How many model cars did he finish on Saturday?

Test 2

A Betty had $.18. She spent $.09 for ribbon. How much money did she have left?

B Tom had 9 stamps. Bill had 8 stamps. Together the boys had how many stamps?

C Jane bought 8 picture postcards for 3¢ apiece. How much in all did she pay for these postcards?

D Jane pasted 36 postcards in a scrapbook. She put 4 cards on each page. How many pages of the scrapbook did she use?

E Bill counted 17 birds in his yard on Friday and 8 birds on Saturday. How many more birds did he count on Friday than on Saturday?

F Ann gave 9 paper dolls to Mary, Carol, and Jane. She gave each girl the same number of dolls. How many paper dolls did each girl get?

G After Ann earned 9¢ by helping her mother, she found she had $.15. How much money did Ann have before she earned the 9¢?

H Tom wanted to buy an ice-cream cone that cost $.15. He had only $.08. How much more money did he need?

Checking up

Test 1

A $6 \times 4 =$ ▒
B $3 \times 8 =$ ▒
C $9 \times 4 =$ ▒
D $3 \times 7 =$ ▒
E $6 \times 5 =$ ▒
F $8 \times 4 =$ ▒
G $3 \times 9 =$ ▒
H $5 \times 5 =$ ▒
I $4 \times 7 =$ ▒

Test 2

A $5 \times 9 =$ ▒
B $8 \times 7 =$ ▒
C $6 \times 8 =$ ▒
D $8 \times 8 =$ ▒
E $7 \times 9 =$ ▒
F $6 \times 7 =$ ▒
G $9 \times 9 =$ ▒
H $6 \times 9 =$ ▒
I $7 \times 7 =$ ▒

Test 3

A $18 \div 3 =$ ▒
B $24 \div 8 =$ ▒
C $32 \div 4 =$ ▒
D $36 \div 6 =$ ▒
E $28 \div 7 =$ ▒
F $14 \div 2 =$ ▒
G $25 \div 5 =$ ▒
H $27 \div 9 =$ ▒
I $24 \div 4 =$ ▒

Test 4

A $42 \div 7 =$ ▒
B $54 \div 9 =$ ▒
C $64 \div 8 =$ ▒
D $45 \div 5 =$ ▒
E $42 \div 6 =$ ▒
F $72 \div 8 =$ ▒
G $40 \div 5 =$ ▒
H $49 \div 7 =$ ▒
I $63 \div 9 =$ ▒

Test 5

A $36 \div$ ▒ $= 6$
B $54 \div$ ▒ $= 6$
C $81 \div$ ▒ $= 9$
D $48 \div$ ▒ $= 8$
E $40 \div$ ▒ $= 5$
F $72 \div$ ▒ $= 8$
G $45 \div$ ▒ $= 5$
H $63 \div$ ▒ $= 9$
I $56 \div$ ▒ $= 7$

Test 6

A $42 \div 7 =$ ▒
B $18 \div$ ▒ $= 3$
C $63 \div 9 =$ ▒
D $72 \div 8 =$ ▒
E $64 \div$ ▒ $= 8$
F $24 \div 6 =$ ▒
G $40 \div 5 =$ ▒
H $49 \div$ ▒ $= 7$
I $30 \div$ ▒ $= 5$

Test 7

A $46 + 38 =$ ▒
B $5 + 20 + 67 =$ ▒
C $422 + 375 =$ ▒
D $308 + 569 =$ ▒
E $95 + 78 + 7 =$ ▒
F $216 + 689 =$ ▒
G $275 + 315 =$ ▒
H $7 + 53 + 60 =$ ▒
I $890 + 436 =$ ▒

Test 8

A $183 - 92 =$ ▒
B $800 - 459 =$ ▒
C $536 - 173 =$ ▒
D $725 - 576 =$ ▒
E $807 - 245 =$ ▒
F $903 - 429 =$ ▒
G $2864 - 1987 =$ ▒
H $300 - 248 =$ ▒
I $6551 - 5748 =$ ▒

Test 9

A $28 +$ ▒ $= 174$
B $456 + 109 =$ ▒
C ▒ $+ 219 = 430$
D $580 +$ ▒ $= 700$
E $58 + 90 =$ ▒
F ▒ $+ 99 = 111$
G $140 +$ ▒ $= 512$
H $719 + 233 =$ ▒
I ▒ $+ 119 = 680$

Test 10

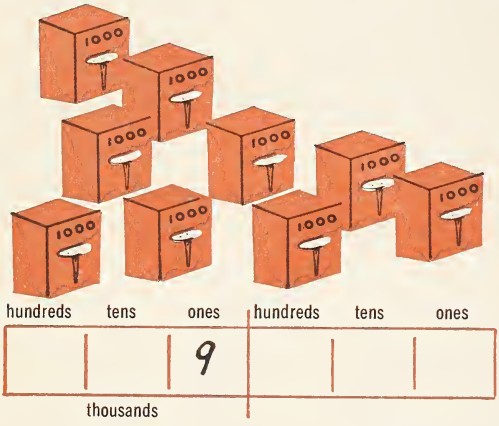
A $25 \div 4 =$ ▒ and ▒ remainder
B $58 \div 8 =$ ▒ and ▒ remainder
C $19 \div 7 =$ ▒ and ▒ remainder
D $46 \div 9 =$ ▒ and ▒ remainder
E $39 \div 5 =$ ▒ and ▒ remainder
F $58 \div 6 =$ ▒ and ▒ remainder
G $29 \div 3 =$ ▒ and ▒ remainder
H $39 \div 4 =$ ▒ and ▒ remainder
I $83 \div 9 =$ ▒ and ▒ remainder

Test 11

A 2 qt. = ▒ pt.
B 1 lb. 5 oz. = ▒ oz.
C 16 pt. = ▒ gal.
D 14 in. = ▒ ft. ▒ in.
E 5 wk. = ▒ da.
F 1 ft. 7 in. = ▒ in.
G ▒ qt. = 5 gal.
H ▒ mo. = 1 yr. 2 mo.
I 39 in. = ▒ yd. ▒ in.

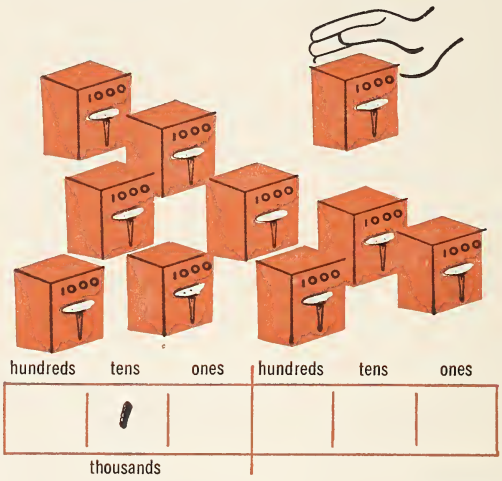
Moving forward

This lesson shows you how to read and write numerals that mean thousands or millions.

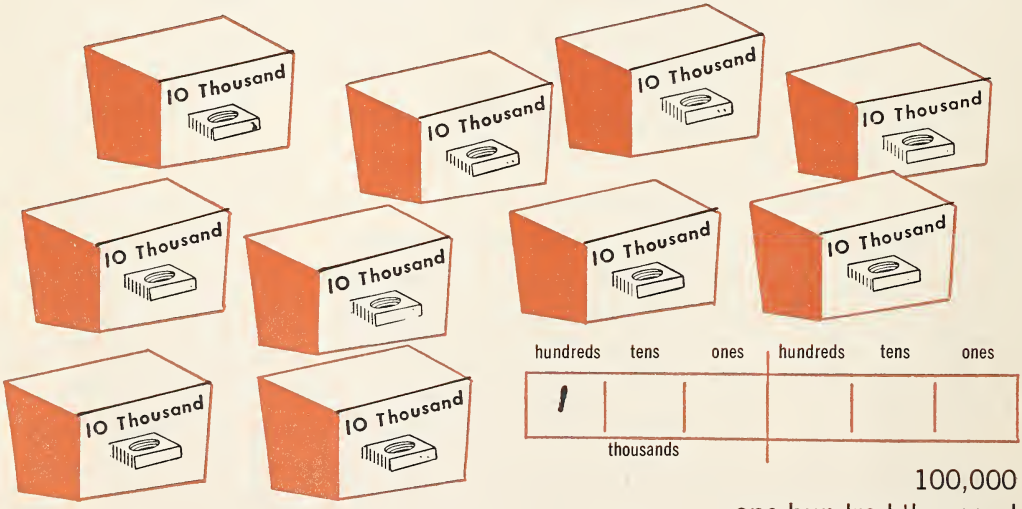


9000
nine thousand

A

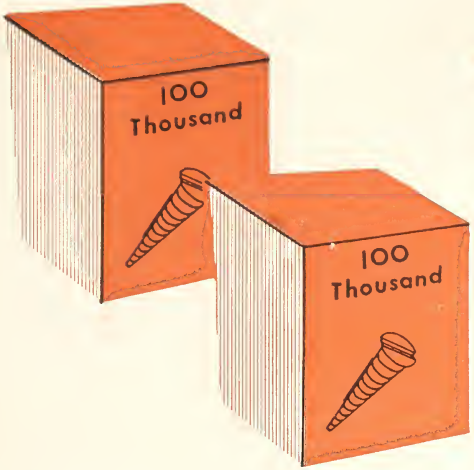


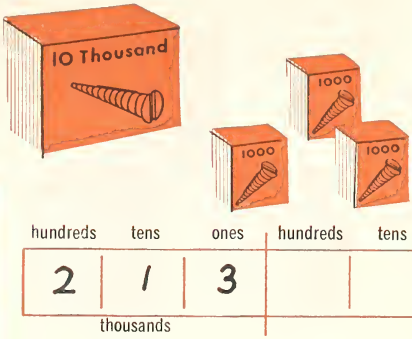
10,000
ten thousand



100,000
one hundred thousand

B





213,000

two hundred thirteen thousand C

Say thousand.

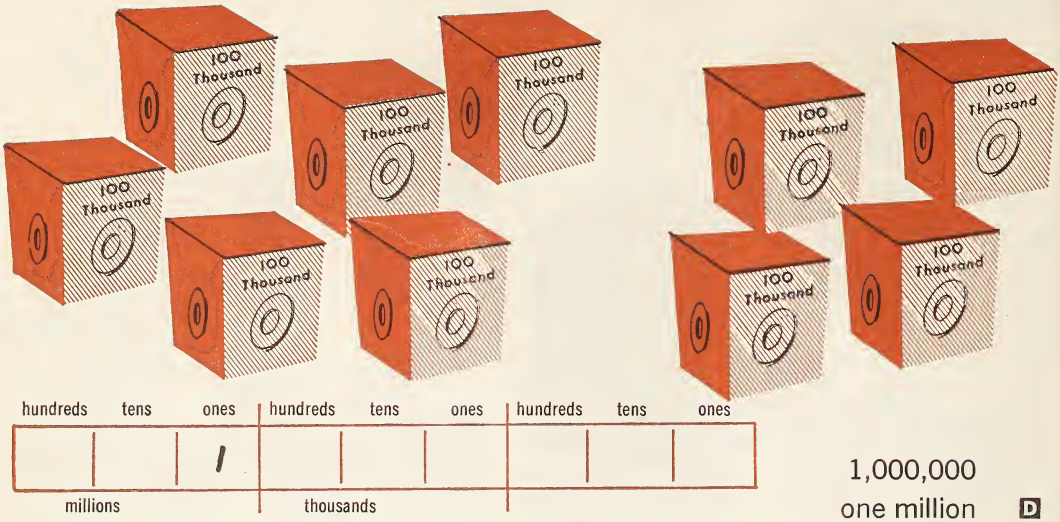
A	25,436
B	481,217
C	16,590
D	30,401
E	128,007
F	73,200
G	49,080

Read.

A	18,213
B	800,050
C	800,500
D	630,004
E	259,000
F	701,408
G	942,671
H	512,492
I	5400
J	260,070
K	500,005
L	905,102
M	71,698
N	8777
O	84,001
P	212,090
Q	67,500
R	9010
S	429,308
T	216,005
U	50,070

Write with numerals.

A seventy thousand
B thirteen thousand
C three hundred thousand
D seven hundred thousand
E sixty thousand eight
F forty-seven thousand
G eight hundred ninety-six
H thirty thousand twenty
I six hundred ten thousand
J fourteen thousand one
K one hundred one thousand
L five hundred thousand seven hundred twenty
M sixteen thousand four hundred two
N twenty-five thousand one hundred thirty
O eight hundred fourteen thousand six
P nine hundred twenty-four thousand two
Q two hundred thousand forty-one
R five hundred ten thousand one hundred
S two thousand four hundred seven
T nine hundred thousand two hundred three
U sixty-five thousand eight hundred ten
V seventy thousand seven



1,000,000
one million **D**

	Say million.	Say thousand.
A	2,557,628	
B	9,346,000	
C	36,801,709	
D	158,000,000	
E	70,400,000	
F	5,000,900	
G	642,263,080	

Read.

A	4,750,529
B	27,386,100
C	3,927,004
D	800,130,900
E	55,741,226
F	198,416,003
G	375,800,000

Read.

A	82,420,000
B	716,000,500
C	1,585,250
D	397,026,488
E	63,080,700
F	8,000,000
G	657,932,060
H	325,609
I	1,000,231
J	42,001
K	900,030
L	60,110
M	390,001,010
N	65,100,200
O	1,232,847

Write with numerals.

A seven million sixty thousand one hundred eight
B twenty million five hundred thousand sixteen
C forty-one million nine thousand two hundred twenty
D three hundred eighty-eight million five hundred
E seven hundred ninety million thirty
F fifty-two million seventy-eight thousand eight
G nine hundred ninety-nine million fifty-six

Now you should be able to read and write numerals that mean thousands or millions.

Thinking straight

Table 1	Table 2	Table 3	Table 4
$5 \times 6 = 30$	$6 \times 5 = 30$	$40 \div 8 = 5$	$5 \div 1 = 5$
$4 \times 6 = 24$	$6 \times 4 = 24$	$32 \div 8 = 4$	$4 \div 1 = 4$
$3 \times 6 = 18$	$6 \times 3 = 18$	$24 \div 8 = 3$	$3 \div 1 = 3$
$2 \times 6 = 12$	$6 \times 2 = 12$	$16 \div 8 = 2$	$2 \div 1 = 2$
$1 \times 6 = 6$	$6 \times 1 = 6$	$8 \div 8 = 1$	$1 \div 1 = 1$
$0 \times 6 = 0$	$6 \times 0 = 0$	$0 \div 8 = 0$	$0 \div 1 = 0$

A Look at Table 1. $5 \times 6 = 30$ is an equation. 5 is the number that you multiply by. 5 is the multiplier.

B Read the other equations in Table 1. What happens to the answer as the multipliers get smaller?

C What is the answer when the multiplier is 0?

D What is the answer when the multiplier is 1?

E What number is the multiplier in each equation in Table 2? Notice that the numbers that are multiplied get smaller. What happens to the answers as these numbers get smaller?

F What is the answer when 1 is multiplied by a number?

G What is the answer when 0 is multiplied by a number?

H Is the answer to 6×1 the same as the answer to 1×6? Is the answer to 6×0 the same as the answer to 0×6?

I Look at Table 3. $40 \div 8 = 5$ is also an equation. The number that you divide by is the divisor. What is the divisor in $40 \div 8 = 5$?

J In Table 3 what is the divisor in each equation?

K In Tables 3 and 4, what happens to the answers as the numbers that you divide get smaller?

L What is the answer when you divide 8 by 8? 1 by 1?

M What is the answer when you divide 0 by 8? 0 by 1?

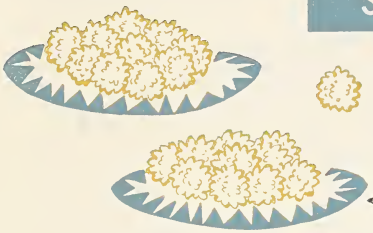
N What is the answer when you divide a number by 1?

O What is the answer when you divide 0 by a number?

A	$9 \times 1 =$ ▒	F	$1 \times 1 =$ ▒
B	$0 \times 1 =$ ▒	G	$1 \div 1 =$ ▒
C	$5 \div 5 =$ ▒	H	$5 \div 1 =$ ▒
D	$0 \div 4 =$ ▒	I	$7 \times 0 =$ ▒
E	$0 \times 0 =$ ▒	J	$1 \times 5 =$ ▒

Exploring problems

see



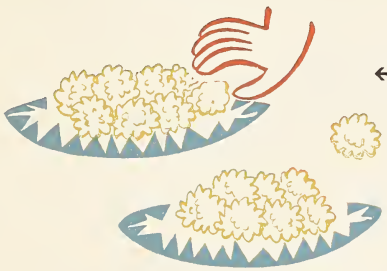
A

The Brown family made 21 popcorn balls. By bedtime there were only 5 left. Sue said, "I wonder how many popcorn balls we ate." How many popcorn balls had they eaten?

The Browns made 21 popcorn balls.

Number of popcorn balls made

21

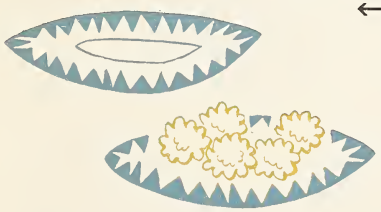


B

You do not know how many popcorn balls they ate.

$21 - \square$

Number of popcorn balls eaten



C

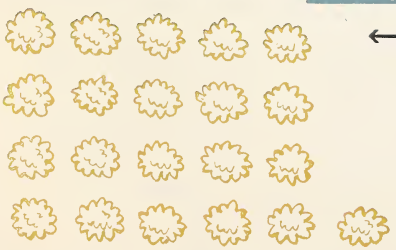
There were 5 popcorn balls left.

$21 - \square = 5$

Number of popcorn balls left

You must find this number.

compute

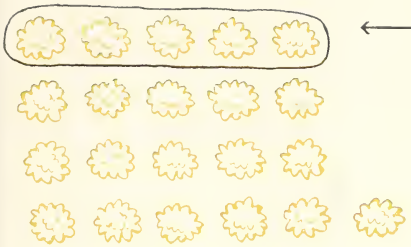


D

You know that the Browns had 21 popcorn balls to begin with.

21

Number of popcorn balls to begin with



E

Think of a group of popcorn balls equal in number to the popcorn balls left.

5 ← Number of popcorn balls left

F

Imagine that this group of 5 popcorn balls is gone.

$$\begin{array}{r} 21 \\ -\ 5 \\ \hline \square \end{array}$$

← Subtract 5 from 21.

$$\begin{array}{r} 21 \\ -\ 5 \\ \hline 16 \end{array}$$

← The number left tells how many popcorn balls the Browns had eaten. They had eaten 16.

$21 - \square = 5$ ← This number is 16. The Browns had eaten 16 popcorn balls.

see

A

Betty had 36 pieces of candy. She gave some of them away. Then she had 12 pieces left. How many pieces did she give away?

$36 - \square = 12$

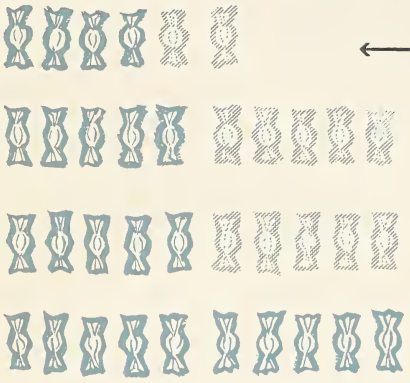
What does this number stand for?

What does this stand for?

What does this number stand for?

Now turn the page.

compute



How many pieces of candy did Betty have at first? Why do you imagine that 12 of them are gone?

B

36
12 ← Why should you subtract 12?

▒ ← What will this number show?

$36 - \square = 12$

↑ Betty gave away ▒ pieces of candy.

A David had 69¢ in the morning. During the day he paid for his lunch at school and bought some pencils. At bedtime he had 24¢ left. How much money had he spent during the day?

Number of cents he had to begin with.
Number of cents he spent.
Number of cents he had left.

$69 - \square = 24$ ← You must find this number.

Subtract 24 from 69.
David spent ▒ cents during the day.

B Tony had 54 baseball cards. He gave all but 18 of them away. How many baseball cards did he give away?
$54 - \square = 18$ Subtract 18 from 54.

C Jim had a bag with 41 marbles in it. The bag broke, and Jim could find only 32 of the marbles. How many marbles had Jim lost?
$41 - \square = 32$ Subtract 32 from 41.

D Mrs. Brown made 18 sandwiches for lunch. After lunch 3 sandwiches were left. How many sandwiches had the Browns eaten?

E Mrs. Brown put a plate of 24 cookies on the lunch table. Six cookies were left after lunch. How many cookies had been eaten?

F Mrs. Brown picked 30 flowers. She kept 14 flowers for herself and sent the rest to school. She sent how many flowers to school?

G Peggy had 35 paper dolls. She gave away all but nine of them. How many paper dolls did she give away?

H Sue has a book about moths and butterflies with 120 pages in it. She has read 86 pages. How many more pages are there for her to read?

I Tom has a collection of stamps. Today his brother gave him 15 new stamps. Now he has 103 stamps. Tom had how many stamps to begin with?

J One day Carol said that she had 45 tickets to sell for a movie at school. At the end of the day she had 17 tickets left. How many tickets had she sold that day?

K Don had 62 match folders. He kept 45 for himself and gave the rest away. How many match folders did Don give away?

L Bill had $3.25. He spent $1.29 for a flashlight. How much money did he have then?

M Betty bought 24 postcards. She kept 15 of them for herself and sent the rest to her friends. She sent how many cards to her friends?

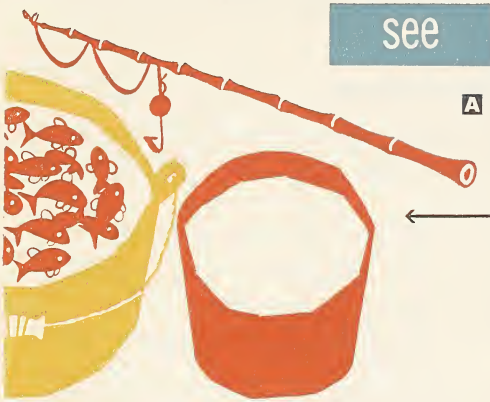
N Nancy bought 12 yards of ribbon. After she had wrapped some packages, she found she had 4 yards of ribbon left. How many yards of ribbon had she used to wrap the packages?

In many of these problems you were finding how many things were gone or lost or eaten.

Keeping skillful

A	$76 - \square = 27$	**A**	$\square + 326 = 409$	**A**	$958 - 230 = \square$
B	$200 - \square = 140$	**B**	$68 + 575 = \square$	**B**	$601 - 449 = \square$
C	$91 - \square = 42$	**C**	$84 + \square = 137$	**C**	$743 - 78 = \square$
D	$603 - \square = 85$	**D**	$390 + \square = 706$	**D**	$560 - 57 = \square$
E	$499 - \square = 271$	**E**	$\square + 208 = 300$	**E**	$900 - 713 = \square$
F	$52 - \square = 38$	**F**	$791 + 430 = \square$	**F**	$826 - 459 = \square$
G	$67 - \square = 59$	**G**	$\square + 95 = 214$	**G**	$514 - 66 = \square$
H	$500 - \square = 163$	**H**	$\square + 731 = 1042$	**H**	$277 - 181 = \square$
I	$384 - \square = 287$	**I**	$89 + \square = 97$	**I**	$3750 - 698 = \square$
J	$4228 - \square = 1718$	**J**	$987 + 4305 = \square$	**J**	$5040 - 1076 = \square$
K	$5693 - \square = 4809$	**K**	$6125 + \square = 8000$	**K**	$7925 - 3895 = \square$

Exploring problems



see

A

David had some minnows in a pail. He gave 11 minnows to Tom and kept 12 for himself. How many minnows were in the pail to begin with?

You do not know how many minnows David had in the pail at first.

Number of minnows David had at first

$\square$

B

He gave 11 minnows to Tom.

Number of minnows David gave to Tom

$\square - 11$

C

David kept 12 minnows for himself.

Number of minnows David kept

$\square - 11 = 12$

You must find this number.

compute

You know that David kept 12 minnows for himself.

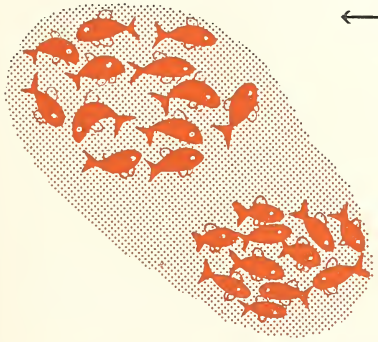
D

12 ← Number of minnows David kept

You also know that David gave 11 minnows to Tom.

E

11 ← Number of minnows David gave to Tom



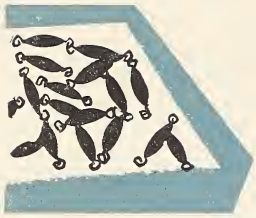
Imagine that the group of 11 minnows is put back with the group of 12 minnows.

F

12
11 ← Add 11 to 12.
___

12
11
23 ← The sum of 12 and 11 tells how many minnows David had in the pail to begin with. He had 23 minnows.

___ − 11 = 12 ← This number is 23. David had 23 minnows to begin with.



see

A Tom had a box of weights for his fish line. After he had given David 4 of them, he had 18 weights left. How many weights did Tom have to begin with?

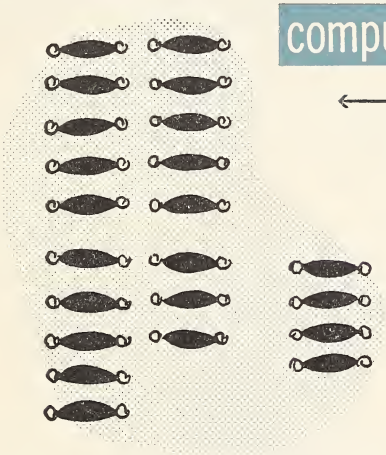
What does this stand for?

What does this number stand for?

$\square - 4 = 18$

What does this number stand for?

compute



How many weights did Tom have left? How many weights do you imagine as put with these 18 weights?

B

$$\begin{array}{r} 18 \\ 4 \\ \hline \square \end{array}$$

Why should you add 4?

What will this number show?

$\square - 4 = 18$

Tom had $\square$ weights to begin with.

A The boys took sandwiches with them when they went fishing. After they had eaten 8 sandwiches, they had 5 left. How many had they taken with them?

Total number of sandwiches.

Number of sandwiches eaten.

$\square - 8 = 5$ ← Number left.

You must find this number.

Add 8 to 5.

B David had some money to spend. After he had paid 45¢ for a new fish pole, he had 23¢ left. How much money did he have to begin with?

$\square - 45¢ = 23¢$ Add 45¢ to 23¢.

C The boys dug some worms to fish with. At the end of the day Tom said, "We used 19 worms, and we have 12 left." How many worms had they dug?

$\square - 19 = 12$ Add 19 to 12.

D Tom's father said, "How many fish did you catch today?" Tom told him, "We had to throw 8 fish back because they were too small. We have 9 fish here." How many fish in all had the boys caught?

E David's new fish pole cost 45¢. Tom's fish pole cost 69¢. Tom's pole cost how much more than David's?

F One day the boys dug worms to sell. Tom dug 26 worms, and David dug 28 worms. Together, the boys dug how many worms?

G Tom saves big cans to use when he goes fishing. After he had given 5 of his cans to his brother, he had 9 cans left. How many cans did Tom have at first?

H One day Tom's father caught a fish that weighed 15 ounces and another fish that weighed 18 ounces. Together the fish weighed how many ounces?

I David caught a turtle that weighed 13 ounces. It weighed how much more than or how much less than 1 pound?

J After Tom's father paid $4.75 to use a rowboat, he had $12.40 left. How much money did he have before he paid for the use of the rowboat?

K Nancy bought some minnows when she went fishing. She used 6 of them and took 12 home with her. How many minnows had she bought?

L Nancy had 75¢ to spend. She paid 53¢ for the minnows. How much money did she have left?

In many of these problems you knew how many things were taken away and how many were left. Then you found how many things there were to begin with.

Keeping skillful

A ▒ − 39 = 24
B ▒ − 76 = 150
C ▒ − 205 = 88
D ▒ − 91 = 169
E ▒ − 437 = 550
F ▒ − 84 = 208
G ▒ − 152 = 474
H ▒ − 600 = 2083

A 83 − ▒ = 56
B 29 + ▒ = 102
C ▒ + 75 = 214
D ▒ − 75 = 214
E 368 + ▒ = 506
F ▒ − 229 = 437
G 740 − ▒ = 681
H ▒ + 198 = 403

A 976 − 401 = ▒
B 724 − 238 = ▒
C 835 − 96 = ▒
D 500 − 417 = ▒
E 608 − 509 = ▒
F 4283 − 2168 = ▒
G 1542 − 677 = ▒
H 3000 − 1234 = ▒

Keeping skillful

A
12 tens 120
120 tens 1200

B
4 tens 40
40 tens 400
400 tens 4000

C
6 hundreds 600
60 hundreds 6000
600 hundreds 60000

D
8 thousands 8000
80 thousands 80000
800 thousands 800000

A
A 13 tens = 13⁓
B 60 tens = 60⁓
C 14 hundreds = 14⁓
D 72 hundreds = 72⁓
E 244 tens = 244⁓
F 16 thousands = 16⁓
G 350 hundreds = 350⁓
H 97 tens = 97⁓
I 112 thousands = 112⁓
J 140 tens = 140⁓
K 25 thousands = 25⁓
L 86 hundreds = 86⁓
M 753 thousands = 753⁓
N 31 tens = 31⁓
O 11 thousands = 11⁓
P 380 hundreds = 380⁓
Q 78 hundreds = 78⁓
R 490 tens = 490⁓

B
A 60 tens = ▒
B 10 hundreds = ▒
C 47 thousands = ▒
D 132 hundreds = ▒
E 96 tens = ▒
F 84 tens = ▒
G 110 thousands = ▒
H 79 hundreds = ▒
I 86 thousands = ▒
J 520 hundreds = ▒
K 21 thousands = ▒
L 90 hundreds = ▒
M 17 tens = ▒
N 260 thousands = ▒
O 790 tens = ▒
P 485 hundreds = ▒
Q 10 tens = ▒
R 38 thousands = ▒

C
A 11 hundreds = ▒
B 119 thousands = ▒
C 44 tens = ▒
D 811 tens = ▒
E 76 hundreds = ▒
F 23 thousands = ▒
G 15 hundreds = ▒
H 500 thousands = ▒
I 99 tens = ▒
J 600 tens = ▒
K 101 hundreds = ▒
L 82 thousands = ▒
M 700 thousands = ▒
N 100 tens = ▒
O 94 hundreds = ▒
P 391 tens = ▒
Q 460 thousands = ▒
R 22 hundreds = ▒

D
A ▒ − 54 = 180
B 95 + ▒ = 202
C 42 − ▒ = 19
D ▒ + 3315 = 4003
E ▒ − 60 = 82
F 86 + 138 = ▒
G 110 − ▒ = 64
H ▒ + 58 = 101
I ▒ − 110 = 346
J 2429 + ▒ = 6576
K 405 − ▒ = 313
L ▒ + 77 = 192
M 784 − ▒ = 511
N 6905 + ▒ = 8407
O 542 + 386 = ▒
P 513 − ▒ = 318
Q ▒ + 226 = 400
R ▒ − 300 = 590

Using arithmetic

A Seven girls went into an art store. Mary counted all the people and said, "There are 31 people in here now." How many people were in the store before the 7 girls went in?

B Sue bought a paintbrush that cost 35¢. She gave the clerk a half dollar. How much money should the clerk have given Sue in change?

C There were some jars of blue paint on a shelf. The clerk sold 18 jars. Then 35 jars were left on the shelf. How many jars of blue paint were on the shelf before he sold the 18?

D Mary asked the clerk to weigh 2 packages. The big package weighed 15 ounces, and the small one weighed 9 ounces. How much heavier was the big package than the small one?

E Jane wanted to buy a drawing board that cost $4.27, a box of paints that cost $1.49, and a box of colored chalk that cost 83¢. How much money did she need for these three things?

F The clerk put 27 coloring books on 3 tables. He put the same number of books on each table. How many coloring books did the clerk put on each table?

G At the art store, jars of paste came in boxes of 6. The fourth grade needed 54 jars of paste. They needed how many boxes of paste?

H A clerk had 120 large sheets of red paper to sell. After he had sold some of them, he found he had 79 sheets left. How many sheets had he sold?

I 8 boys bought a box of 72 colored pencils and shared them equally. Each boy got how many pencils?

J Ellen had 22 pieces of colored chalk. She bought some more, and then she had 30 pieces of chalk. How many pieces did she buy?

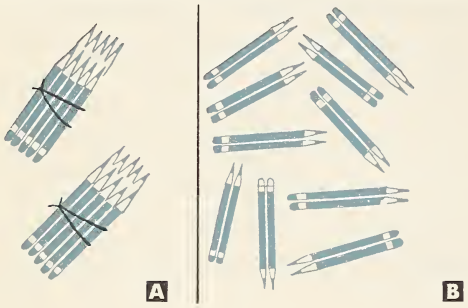
K Peggy bought a spool of red ribbon with 55 feet of ribbon on it and a spool of blue ribbon with 36 feet on it. She bought how much more red ribbon than blue ribbon?

L The clerk said, "I sold 208 pencils today. Now I have 512 pencils left." How many pencils did the clerk have to begin with?

M Carol bought 8 colored pencils for 9¢ apiece. How much did she pay for the 8 pencils?

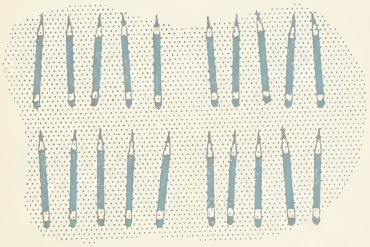
Moving forward

This lesson shows how to multiply when numbers like 20, 60, 500, and 700 are used.



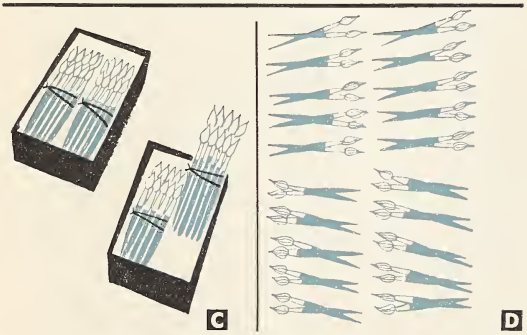
A In the school storeroom there were 2 bundles of blue drawing pencils. There were 10 pencils in each bundle. How many blue pencils were there in all?

$2 \times 10 =$ 2 tens, or 20
$2 \times 10 =$ ▒



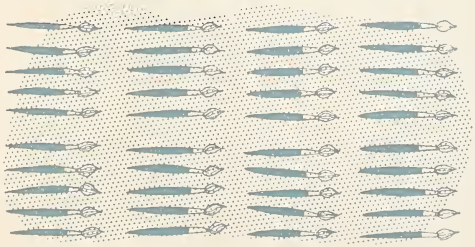
B John found some blue drawing pencils in Room 8. There were 10 groups of 2 pencils each. How many blue pencils did he find?

$10 \times 2 =$ 2 tens, or 20
$10 \times 2 =$ ▒



C In the school storeroom there were 2 boxes of paintbrushes. There were 20 brushes in each box. How many paintbrushes were in the storeroom?

$2 \times 20 =$ 4 tens, or 40
$2 \times 20 =$ ▒

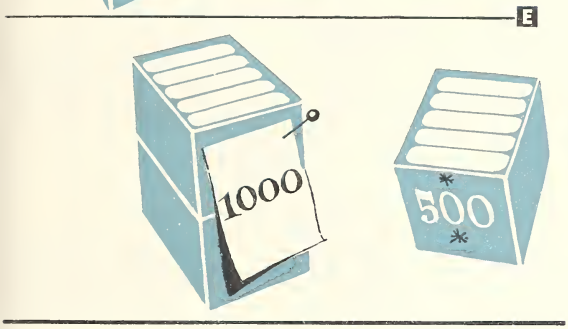


D Sue gave each of 20 children in her room 2 paintbrushes. She gave them how many paintbrushes in all?

$20 \times 2 =$ 4 tens, or 40
$20 \times 2 =$ ▒

E There were 3 boxes of paste sticks on a shelf. There were 500 paste sticks in each box. How many paste sticks were on the shelf?

$3 \times 500 =$ 15 hundreds, or 1500
$3 \times 500 =$ ▒



F If there were 500 groups of 3 paste sticks each on the shelf, how many paste sticks in all would there be on the shelf?

$500 \times 3 =$ 15 hundreds, or ▒
$500 \times 3 =$ ▒

A $5 \times 60 =$ ▒ tens, or ▒
$60 \times 5 =$ ▒ tens, or ▒

B $4 \times 30 =$ ▒ tens, or ▒
$30 \times 4 =$ ▒ tens, or ▒

C $7 \times 300 =$ ▒ hundreds, or ▒
$300 \times 7 =$ ▒ hundreds, or ▒

D $5 \times 400 =$ ▒ hundreds, or ▒
$400 \times 5 =$ ▒ hundreds, or ▒

A	$5 \times 10 =$ ▒	$10 \times 5 =$ ▒
B	$2 \times 300 =$ ▒	$300 \times 2 =$ ▒
C	$2 \times 900 =$ ▒	$900 \times 2 =$ ▒
D	$3 \times 30 =$ ▒	$30 \times 3 =$ ▒
E	$6 \times 600 =$ ▒	$600 \times 6 =$ ▒
F	$4 \times 70 =$ ▒	$70 \times 4 =$ ▒
G	$7 \times 50 =$ ▒	$50 \times 7 =$ ▒
H	$5 \times 200 =$ ▒	$200 \times 5 =$ ▒
I	$3 \times 400 =$ ▒	$400 \times 3 =$ ▒

A	$6 \times 300 =$ ▒
B	$9 \times 80 =$ ▒
C	$10 \times 7 =$ ▒
D	$2 \times 400 =$ ▒
E	$700 \times 2 =$ ▒
F	$8 \times 40 =$ ▒
G	$20 \times 9 =$ ▒
H	$50 \times 5 =$ ▒
I	$900 \times 3 =$ ▒

J	$7 \times 70 =$ ▒
K	$5 \times 600 =$ ▒
L	$300 \times 3 =$ ▒
M	$4 \times 90 =$ ▒
N	$8 \times 60 =$ ▒
O	$400 \times 4 =$ ▒
P	$10 \times 3 =$ ▒
Q	$6 \times 900 =$ ▒
R	$700 \times 5 =$ ▒

Now you should be able to multiply, using a number like 20, 40, or 300.

Learning how

In this lesson you will learn more about multiplying numbers that have two figures in them.

see

A

Peggy, Carol, and Sue collect buttons. Each girl has promised to bring 24 buttons to a hobby show at school. How many buttons will the 3 girls bring?

$3 \times 24 = \square$

You must find this number.

B

Put the 3 groups of 4 buttons together.

$$\begin{array}{r} 24 \\ \times\ 3 \\ \hline \end{array}$$

Multiply 4 ones by 3. There are 12 ones.

C

Put 10 of the 12 buttons into a box. You have 2 buttons left over.

$$\begin{array}{r} 24 \\ \times\ 3 \\ \hline 2 \end{array}$$

12 is 1 ten 2 ones. Write 2 here to show that there are 2 ones in the answer.

Put the new box of 10 buttons aside.

D

$$\begin{array}{r} 24 \\ \times\ 3 \\ \hline 2 \end{array}$$

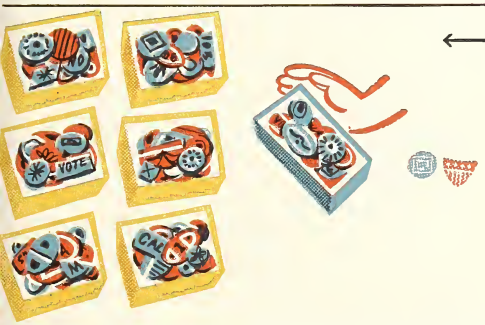
Remember that you have another ten.

Now put the 3 groups of 20 buttons together.

E

$$\begin{array}{r} \overset{\curvearrowleft}{2}4 \\ \times\ 3 \\ \hline 2 \end{array}$$

Multiply 20, or 2 tens, by 3. There are 6 tens.



Put the new box of ten with the 6 boxes of ten.

F

$$\begin{array}{r} 24 \\ \times\ 3 \\ \hline 72 \\ \uparrow \end{array}$$

You had 1 ten to remember. Now add it to the 6 tens. There are 7 tens in all.

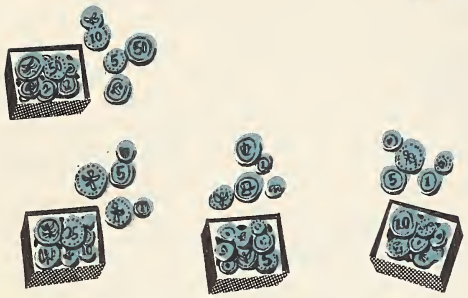
Write 7 here to show there are 7 tens in the answer.

G

The girls will bring 72 buttons to the hobby show.

$3 \times 24 = 72$

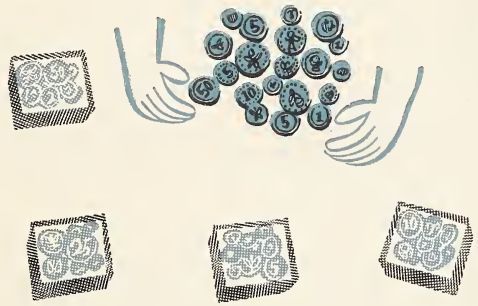
think



A

Four boys will bring coins to the hobby show. Each boy will bring 15 coins. How many coins will the boys bring in all?

$4 \times 15 = \square$ ← You must find this number.



B

← What do you put together first?

15 ← What do you multiply first?
4 How many ones are there?

C

← How many new boxes of 10 coins can you make? Will any coins be left over?

15
4 20 is ▒ tens.

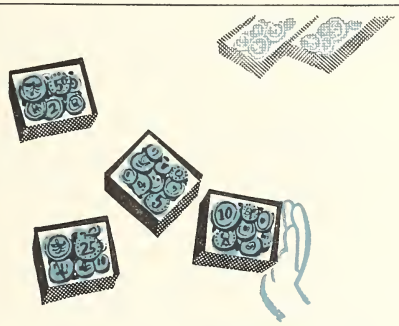
0 ← Why do you write 0 here?

What do you do with the 2 new boxes of 10 coins?

D

$$\begin{array}{r} 15 \\ \times\ 4 \\ \hline 0 \end{array}$$

What must you remember?



Now what do you put together?

E

Now what do you multiply?
How many tens are there?

$$\begin{array}{r} 15 \\ \times\ 4 \\ \hline 0 \end{array}$$

What do you do with the 2 new boxes of ten?

F

$$\begin{array}{r} 15 \\ \times\ 4 \\ \hline 60 \end{array}$$

Why do you write 6 here instead of 4?

G

The boys will bring ▒ coins to the hobby show.

$4 \times 15 = ▒$

try

A Sixteen boys have promised to bring model airplanes to the hobby show. Each boy will bring 3 airplanes. How many airplanes will the boys bring?

$16 \times 3 = \square$

$$\begin{array}{r} 16 \\ \times\ 3 \\ \hline 48 \end{array}$$ ← Multiply by the smaller number.

B $7 \times 31 = \square$

$$\begin{array}{r} 31 \\ \times\ 7 \\ \hline 217 \end{array}$$ ← Why does this answer have three figures?

C $9 \times 56 = \square$

$$\begin{array}{r} 56 \\ \times\ 9 \\ \hline 504 \end{array}$$

D $27 \times 3 = \square$

$$\begin{array}{r} 27 \\ \times\ 3 \\ \hline 81 \end{array}$$

---

do

A Dick will bring 2 stamp books to the hobby show. Each book has 96 stamps in it. How many stamps in all will he bring to the show?

$2 \times 96 = \square$

B Each of 14 girls will bring 8 china animals to the show. The girls will bring how many china animals in all?

$14 \times 8 = \square$

C Five boys will bring pictures that they have taken with their cameras. Each boy will bring 12 pictures. They will bring how many pictures in all?

$5 \times 12 = \square$

D Each of 21 girls has promised to bring 4 dolls to the show. How many dolls have the girls promised to bring?

$21 \times 4 = \square$

E $6 \times 47 = \square$
F $5 \times 31 = \square$
G $54 \times 8 = \square$
H $2 \times 99 = \square$
I $65 \times 4 = \square$
J $43 \times 3 = \square$
K $5 \times 18 = \square$
L $15 \times 7 = \square$

M $6 \times 41 = \square$
N $9 \times 35 = \square$
O $8 \times 72 = \square$
P $69 \times 6 = \square$
Q $4 \times 27 = \square$
R $83 \times 2 = \square$
S $7 \times 13 = \square$
T $52 \times 4 = \square$

A $9 \times 78 = \square$
B $5 \times 16 = \square$
C $71 \times 6 = \square$
D $2 \times 94 = \square$
E $53 \times 3 = \square$
F $7 \times 19 = \square$
G $2 \times 89 = \square$
H $4 \times 55 = \square$

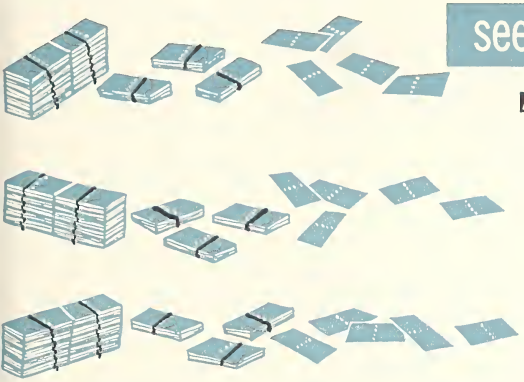
I $28 \times 5 = \square$
J $8 \times 34 = \square$
K $9 \times 49 = \square$
L $3 \times 78 = \square$
M $6 \times 35 = \square$
N $47 \times 5 = \square$
O $7 \times 22 = \square$
P $56 \times 3 = \square$

Now you should be able to multiply any two-figure number by any one-figure number.

Learning how

In this lesson you will learn more about multiplying numbers with three figures in them.

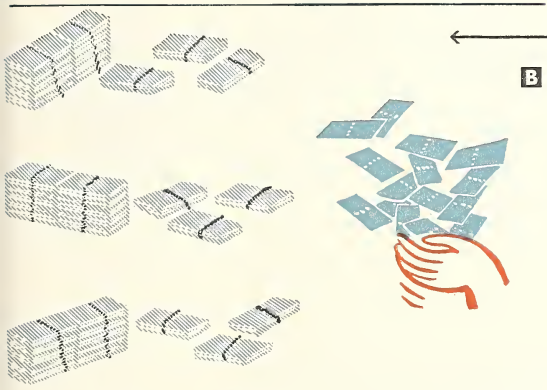
see



A

The fifth and sixth graders gave a puppet show 3 times. They sold 135 tickets for each show. How many tickets did they sell for all 3 shows?

$3 \times 135 = \square$ ← You must find this number.

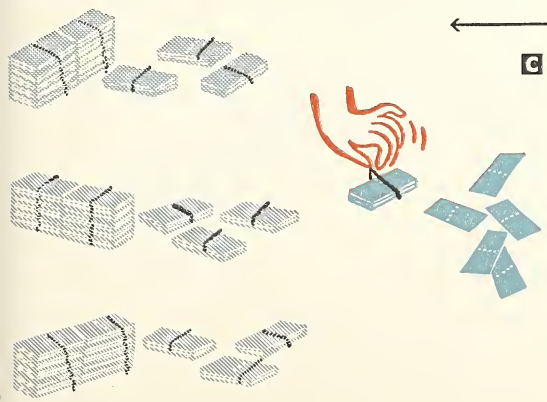


B

← Put the 3 groups of 5 tickets together.

$$\begin{array}{r} 135 \\ \times\ \ 3 \\ \hline \end{array}$$

← Multiply 5 ones by 3. There are 15 ones.



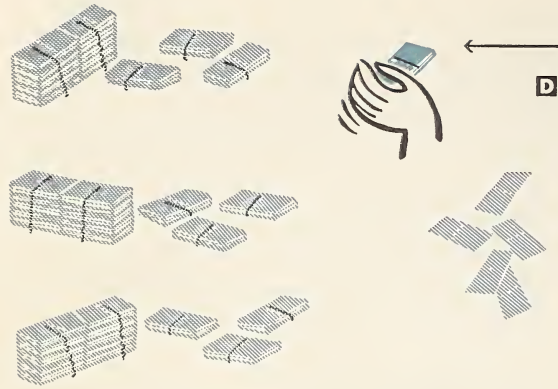
C

← Make a new bundle of 10 tickets. There are 5 tickets left over.

$$\begin{array}{r} 135 \\ \times\ \ 3 \\ \hline 5 \end{array}$$

← 15 is 1 ten 5 ones. Write 5 here to show that there are 5 ones in the answer.

Now turn the page.

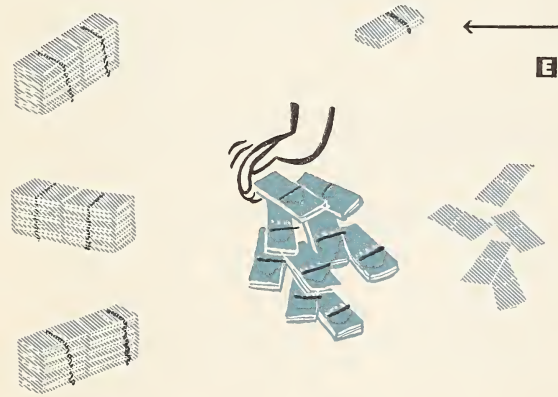


Put the new bundle of 10 tickets aside.

D

$$\begin{array}{r} 135 \\ 3 \\ \hline 5 \end{array}$$

Remember this new ten.

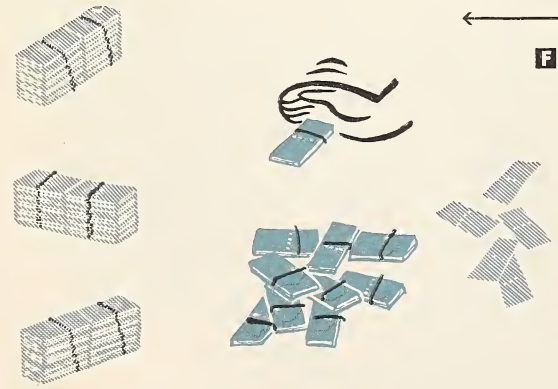


Now put the 3 groups of 30 tickets together.

E

$$\begin{array}{r} 135 \\ 3 \\ \hline 5 \end{array}$$

Multiply 30, or 3 tens, by 3. There are 9 tens.

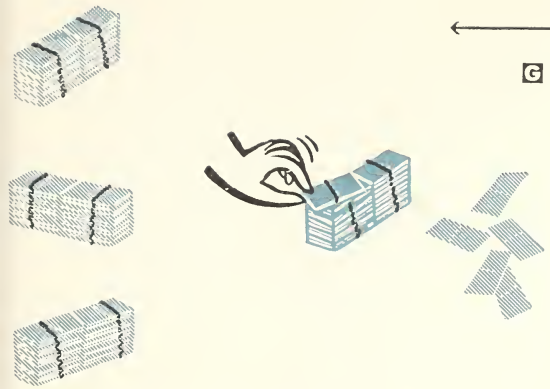


Put the new bundle of ten with the 9 bundles of ten.

F

$$\begin{array}{r} 135 \\ 3 \\ \hline 5 \end{array}$$

Remember to add the new ten to the 9 tens.
Now there are 10 tens.



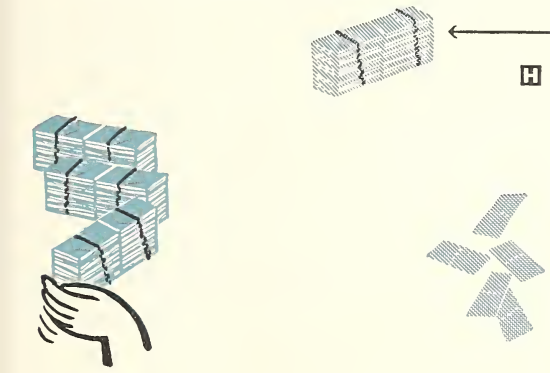
Make a new pile of 100 tickets.
There are no bundles of ten left.
Put the new pile of 100 tickets aside.

G

135
3
05

10 tens equal 1 hundred.
Remember that you have a new hundred.

Write 0 here to show there are no tens in the answer.



Put the 3 old piles of 100 tickets together.

H

Multiply 100 by 3. There are 3 hundreds.

135
3
05

Put the new pile of 100 with the other hundreds.

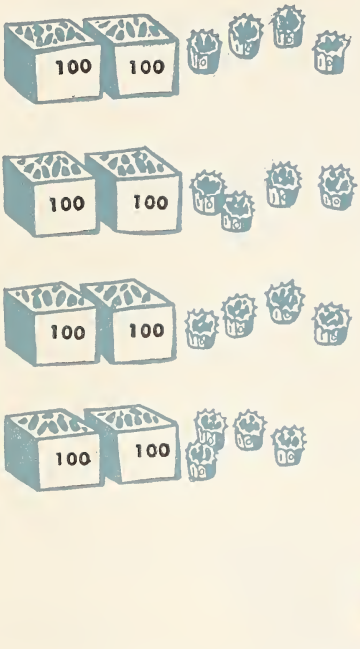
I

135
3
405

Remember to add the new hundred. Now there are 4 hundreds.

Write 4 here to show there are 4 hundreds in the answer.

The children sold 405 tickets.
$3 \times 135 = 405$



think

A

Every day Mrs. Page orders 240 rolls for the school lunchroom. How many rolls does she order in 5 days?

$5 \times 240 = \square$ ← You must find this number.

B

← Are there any single rolls to put together?

$$\begin{array}{r} 240 \\ \times\ \ 5 \\ \hline 0 \end{array}$$

← Why should you write 0 here?

What do you put together first?

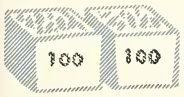
C

How many tens are there after you multiply?

$$\begin{array}{r} 240 \\ \times\ \ 5 \\ \hline 0 \end{array}$$

How many boxes of 100 rolls do you make from the 20 bags of 10 rolls? Are any bags of 10 rolls left over?

D

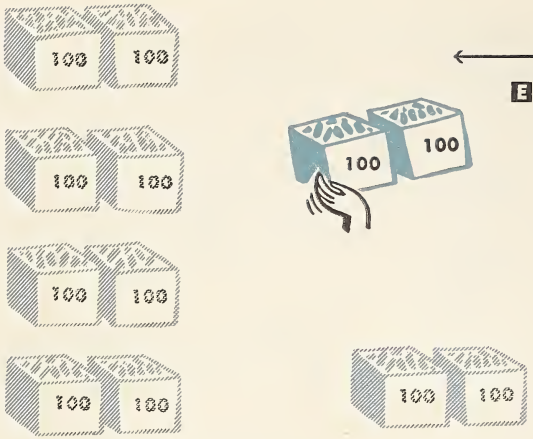


$$\begin{array}{r} 240 \\ \times\ \ 5 \\ \hline 00 \end{array}$$

20 tens equal ▒ hundreds.

Why should you write 0 here?

Now turn the page.



What do you do with the 2 new boxes of 100 rolls?

E

$$\begin{array}{r} 240 \\ \times\ \ 5 \\ \hline 00 \end{array}$$

How many hundreds must you remember?

Now what do you put together?

F

$$\begin{array}{r} 240 \\ \times\ \ 5 \\ \hline 00 \end{array}$$

What do you multiply now? How many hundreds are there when you multiply?

What do you do with the 2 new boxes of 100?

G

$$\begin{array}{r} 240 \\ \times\ \ 5 \\ \hline 1200 \end{array}$$

Why do you write 12 here instead of 10?

Mrs. Page orders ▒ rolls in 5 days.

$5 \times 240 = ▒$

try

A Mrs. Page said that about 320 children ate in the school lunchroom every day for the first three days of this week. About how many children in all ate in the lunchroom on those three days?

$3 \times 320 =$ ▒

$$\begin{array}{r} 320 \\ \times\ 3 \\ \hline 960 \end{array}$$

B $6 \times 539 =$ ▒

$$\begin{array}{r} 539 \\ \times\ 6 \\ \hline 3234 \end{array}$$

C $4 \times 402 =$ ▒

$$\begin{array}{r} 402 \\ \times\ 4 \\ \hline 1608 \end{array}$$

Why is 0 written here?

D $608 \times 7 =$ ▒

$$\begin{array}{r} 608 \\ \times\ 7 \\ \hline 4256 \end{array}$$

Why is 5 written here?

do

A Every day Mrs. Page orders 125 ice-cream bars. How many does she order in 5 days?

$5 \times 125 =$ ▒

B At Field School the children use about 275 library books every day. About how many library books do they use in 5 days?

$5 \times 275 =$ ▒

C Each of three hundred twenty-eight children promised to bring 2 books to school for the Junior Red Cross. How many books in all was this?

$328 \times 2 =$ ▒

D Field School has 180 days of school each year. How many days of school does Field School have in 8 years?

$8 \times 180 =$ ▒

E $3 \times 510 =$ ▒
F $684 \times 4 =$ ▒
G $317 \times 7 =$ ▒
H $3 \times 162 =$ ▒
I $8 \times 795 =$ ▒
J $6 \times 554 =$ ▒
K $401 \times 5 =$ ▒
L $7 \times 589 =$ ▒

M $2 \times 930 =$ ▒
N $206 \times 8 =$ ▒
O $133 \times 4 =$ ▒
P $9 \times 308 =$ ▒
Q $650 \times 4 =$ ▒
R $6 \times 149 =$ ▒
S $5 \times 817 =$ ▒
T $220 \times 3 =$ ▒

A $7 \times 107 =$ ▒
B $463 \times 2 =$ ▒
C $9 \times 216 =$ ▒
D $6 \times 124 =$ ▒
E $340 \times 8 =$ ▒
F $2 \times 705 =$ ▒
G $4 \times 931 =$ ▒
H $7 \times 520 =$ ▒

I $332 \times 3 =$ ▒
J $6 \times 845 =$ ▒
K $432 \times 8 =$ ▒
L $309 \times 2 =$ ▒
M $115 \times 7 =$ ▒
N $180 \times 9 =$ ▒
O $5 \times 538 =$ ▒
P $273 \times 3 =$ ▒

Now you should be able to multiply any three-figure number by any one-figure number.

Learning how

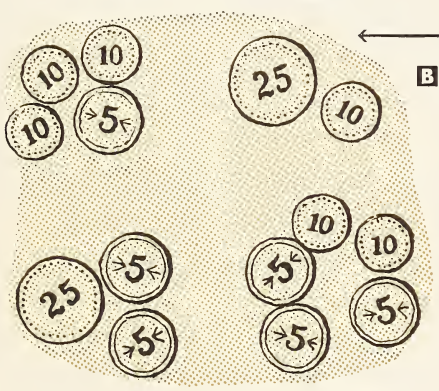
In this lesson you will learn how to multiply numbers that mean dollars and cents.

see

A

Betty earns 35¢ a week by helping her mother wash dishes. How much money does she earn in 4 weeks?

$4 \times 35¢ = \square$ ← You must find this number.

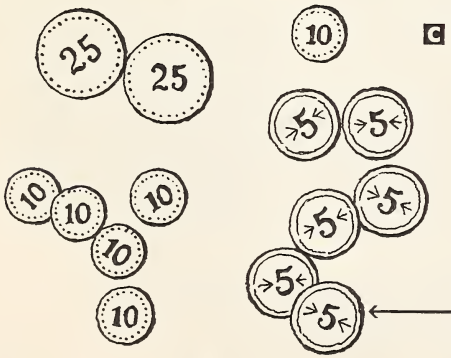


B

Imagine that the 4 groups of 35¢ are put together.

$$\begin{array}{r} 35 \\ \times\ 4 \\ \hline 140 \end{array}$$

Multiply just as you do with any numbers. When you multiply 35 by 4, the answer is 140. You know that this 140 means 140 cents, or 1 dollar and 40 cents.



C

When you multiply an amount of money, write the amount with a point and dollar sign.

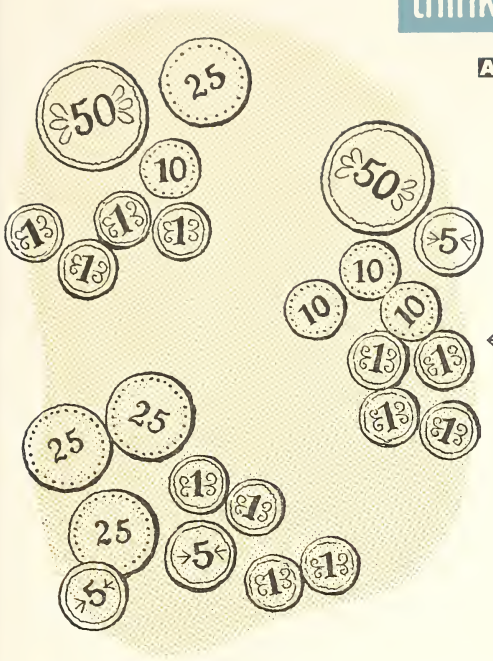
$$\begin{array}{r} \$\ .35 \\ \times\ \ \ 4 \\ \hline \$1.40 \end{array}$$

← Remember to put a point and dollar sign in the answer.

← Betty earns $1.40 in 4 weeks.

$4 \times \$.35 = \$1.40$

think



A John is earning money to buy 3 model trucks. The trucks cost 89¢ apiece. How much money does John need to buy these trucks?

$3 \times \$.89 = \square$ ← You must find this number.

← There are ▒ groups of ▒¢ each.

$$\begin{array}{r} \$\ .89 \\ \times\ \ 3 \\ \hline \$2.67 \end{array}$$

Why is no point or dollar sign written here?

What must you remember to write in the answer?

John needs how much money?

$3 \times \$.89 = \square$

try

A David's father bought 2 baseball bats for the boys. The bats cost $1.65 each. The bats cost how much in all?

$2 \times \$1.65 = \square$

$$\begin{array}{r} \$1.65 \\ \times\ \ 2 \\ \hline \$3.30 \end{array}$$

B Mrs. Brown bought 3 books to give to Sue on her birthday. The books cost $1.75 each. How much did the 3 books cost?

$3 \times \$1.75 = \square$

$$\begin{array}{r} \$1.75 \\ \times\ \ 3 \\ \hline \$5.25 \end{array}$$

C $5 \times \$2.37 = \square$

$$\begin{array}{r} \$\ 2.37 \\ \times\ \ 5 \\ \hline \$11.85 \end{array}$$

Why does this answer have 4 figures?

D $8 \times \$.73 = \square$

$$\begin{array}{r} \$\ .73 \\ \times\ \ 8 \\ \hline \$5.84 \end{array}$$

E $6 \times \$4.05 = \square$

$$\begin{array}{r} \$\ 4.05 \\ \times\ \ 6 \\ \hline \$24.30 \end{array}$$

do

A Betty bought 4 dozen oranges. The oranges cost $.48 a dozen. How much did all of the oranges cost?
$4 \times \$.48 =$ ▢

B Each of 6 children paid 30¢ to go to a movie. How much did the children pay altogether to go to the movie?
$6 \times \$.30 =$ ▢

C $7 \times \$3.11 =$ ▢
D $3 \times \$.92 =$ ▢
E $9 \times \$.18 =$ ▢
F $5 \times \$1.39 =$ ▢
G $4 \times \$2.20 =$ ▢
H $2 \times \$7.50 =$ ▢
I $6 \times \$.76 =$ ▢
J $8 \times \$.45 =$ ▢

K $5 \times \$.90 =$ ▢
L $9 \times \$2.09 =$ ▢
M $4 \times \$.59 =$ ▢
N $2 \times \$3.16 =$ ▢
O $7 \times \$.62 =$ ▢
P $6 \times \$1.88 =$ ▢
Q $8 \times \$2.17 =$ ▢
R $3 \times \$5.21 =$ ▢

A $8 \times \$.49 =$ ▢
B $6 \times \$4.25 =$ ▢
C $5 \times \$.34 =$ ▢
D $3 \times \$3.08 =$ ▢
E $9 \times \$.63 =$ ▢
F $4 \times \$.77 =$ ▢
G $2 \times \$.85 =$ ▢
H $7 \times \$5.30 =$ ▢

I $3 \times \$.27 =$ ▢
J $9 \times \$1.41 =$ ▢
K $7 \times \$.80 =$ ▢
L $8 \times \$4.05 =$ ▢
M $2 \times \$.79 =$ ▢
N $6 \times \$.24 =$ ▢
O $5 \times \$2.25 =$ ▢
P $4 \times \$5.02 =$ ▢

Now you should be able to multiply amounts of money by one-figure numbers.

Keeping skillful

A $28 + 47 + 39 =$ ▢
B $709 + 805 =$ ▢
C $253 + 458 + 170 =$ ▢
D $541 + 633 + 225 =$ ▢
E $87 + 92 + 60 =$ ▢
F $913 + 784 + 54 =$ ▢
G $500 + 392 + 176 =$ ▢
H $48 + 107 + 75 =$ ▢
I $26 + 19 + 34 =$ ▢
J $208 + 516 =$ ▢
K $836 + 241 =$ ▢
L $769 + 500 + 350 =$ ▢
M $426 + 52 + 89 =$ ▢
N $948 + 202 + 590 =$ ▢
O $577 + 688 =$ ▢
P $84 + 173 + 97 =$ ▢

A ▢ $+ 249 = 600$
B $73 +$ ▢ $= 141$
C $687 - 215 =$ ▢
D $803 -$ ▢ $= 116$
E ▢ $- 58 = 207$
F ▢ $+ 1531 = 2703$
G $8621 - 4935 =$ ▢
H ▢ $- 327 = 452$
I $700 - 168 =$ ▢
J $165 +$ ▢ $= 309$
K $624 -$ ▢ $= 96$
L $4000 - 2554 =$ ▢
M ▢ $+ 582 = 609$
N $926 - 438 =$ ▢
O $8002 - 5671 =$ ▢
P $748 +$ ▢ $= 1089$

A $6 \times 43 =$ ▢
B $9 \times 500 =$ ▢
C $74 \times 7 =$ ▢
D $3 \times 628 =$ ▢
E $5 \times 86 =$ ▢
F $718 \times 2 =$ ▢
G $4 \times 96 =$ ▢
H $80 \times 7 =$ ▢
I $8 \times 900 =$ ▢
J $3 \times 55 =$ ▢
K $87 \times 6 =$ ▢
L $9 \times 79 =$ ▢
M $5 \times 430 =$ ▢
N $30 \times 3 =$ ▢
O $8 \times 123 =$ ▢
P $19 \times 7 =$ ▢

Using arithmetic

A Sue's Brownie troop meets 4 times a month. How many times does it meet in 6 months?

B Sue collects the dues each week from the girls in her troop. Each week she collects $1.80. How much does she collect in dues in 8 weeks?

C The Brownies made 54 toys to give away. They put the same number of toys into each of 6 boxes. How many toys did they put into each box?

D Some of the Brownies made bean bags. They made 7 bean bags in all. Ann said that there were about 150 beans in each bag. About how many beans were there in all 7 bags?

E Ann made 9 clown hats. She used 8 bells for each clown hat. How many bells did she use in all?

F Sue made 8 clown hats. She used 13 bells for each clown hat. How many bells did she use in all?

G How many more bells did Sue use for the 8 clown hats she made than Ann used for the 9 clown hats that she made?

THINK In Problem E you found out how many bells Ann used. What does Problem F tell you?

H Ellen's troop has a garden. They spent 63¢ for seeds. 7 girls shared the cost of the seeds equally. What was each girl's share of the cost?

I The girls also bought 5 rakes. Each rake cost $1.29. How much in all did the girls spend for the 5 rakes?

J Each of 7 girls set out 24 plants. How many plants in all did they set out?

K Each of 14 girls brought 3 books to a Brownie meeting. How many books did the 14 girls bring to the Brownie meeting?

L Mary collects the dues each week from the girls in her troop. Each week she collects $1.12. How much does she collect in dues in 9 weeks?

M Each of 4 Brownie troops gave $1.75 to the Red Cross. How much money in all did the 4 troops give?

N Mary has 5¢. She needs 15¢ to pay her troop dues. How much more money must she have before she can pay her troop dues?

O Carol's troop bought 3 books. Each book cost $1.98. How much altogether did the 3 books cost?

P The Brownies made 3 kinds of cookies at one of their meetings. They made 49 sugar cookies, 51 chocolate cookies, and 35 nut cookies. How many cookies did they make altogether?

Q Ann put 5 of these cookies into each of 25 small bags. How many cookies in all did she put into bags?

R How many cookies did Ann have left over?

THINK In Problem P you found out how many cookies the girls made. In Problem Q you found out how many cookies Ann put into bags.

S The Brownies had a picnic. When it began, 42 girls were there. More girls came to the picnic after it began. Then there were 57 girls at the picnic. How many of the girls came after the picnic began?

T Each of the 57 girls ate 3 cupcakes. How many cupcakes did the girls eat?

U Mary and Sue helped to put food on 5 tables. They put 36 sandwiches on each table. They put how many sandwiches in all on the 5 tables?

V Ann said, as she counted a pile of paper plates, "These 64 plates came out of 8 packages. I know that there was the same number of plates in each package. I wonder how many there were in each package." There were how many plates in each package?

W The girls put 12 of these plates on each of the 5 tables. How many of the 64 plates did they use?

X 32 girls separated into 4 teams for a race. There was the same number of girls on each team. There were how many girls on each team?

Y Each of 4 girls spent $1.75 for picnic food. How much did they spend in all for picnic food?

Keeping skillful

A 43 hundreds = 43~

B 19 tens = ▭

C 21 thousands = ▭

D 57 thousands = ▭

E 120 tens = ▭

F 98 hundreds = ▭

G 115 tens = ▭

H 88 thousands = ▭

A $8 \times \$.95 =$ ▭

B $5 \times \$8.40 =$ ▭

C $2 \times \$1.55 =$ ▭

D $6 \times \$.28 =$ ▭

E $3 \times \$9.84 =$ ▭

F $7 \times \$6.27 =$ ▭

G $4 \times \$.86 =$ ▭

H $9 \times \$1.19 =$ ▭

A $330 \times 8 =$ ▭

B $6 \times 28 =$ ▭

C $4 \times 182 =$ ▭

D $7 \times 923 =$ ▭

E $68 \times 5 =$ ▭

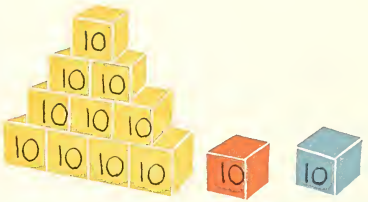
F $3 \times 700 =$ ▭

G $2 \times 950 =$ ▭

H $116 \times 9 =$ ▭

Moving forward

This lesson will show you how to multiply by a number like 10, 20, 100, or 200.



A 12 tens = 10 twelves
$12 \times 10 = 10 \times 12$ 120

B 14 tens = 10 fourteens
$14 \times 10 = 10 \times 14$ 140

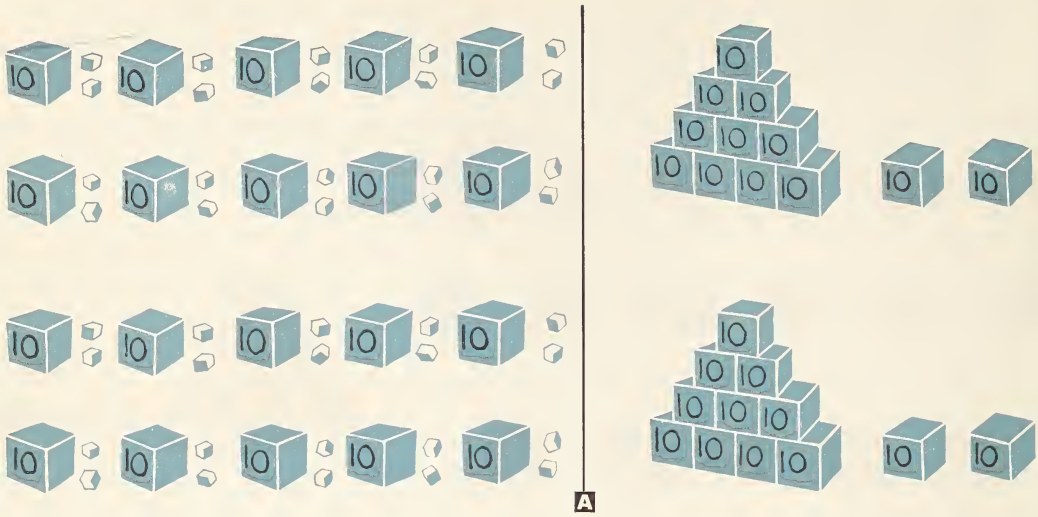
C $10 \times 18 = 180$
D $10 \times 24 = 240$
E $10 \times 65 = 65\sim$
F $10 \times 36 = 36\sim$
G $10 \times 120 = 1200$
H $10 \times 240 = 240\sim$
I $10 \times 342 = 342\sim$
J $10 \times 196 = 196\sim$
K $10 \times 504 = 504\sim$
L $10 \times 730 = 730\sim$

A 6 hundreds = 100 sixes
$6 \times 100 = 100 \times 6$ 600

B 15 hundreds = 100 fifteens
$15 \times 100 = 100 \times 15$ 1500

C $100 \times 30 = 30\sim$
D $100 \times 212 = 212\sim$
E $100 \times 85 = 85\sim$
F $100 \times 19 = 19\sim$
G $100 \times 411 = 411\sim$
H $100 \times 593 = 593\sim$
I $100 \times 99 = 99\sim$
J $100 \times 646 = 646\sim$
K $100 \times 78 = 78\sim$
L $100 \times 301 = 301\sim$

Now turn the page.



A 10 twelves = 10 × 12, or 120
20 twelves = 20 × 12, or 240
30 twelves = 30 × 12, or 360

B 10 eighteens = 10 × 18, or 180
20 eighteens = 20 × 18, or 360
30 eighteens = 30 × 18, or 540

C 20 × 42 = 840
30 × 42 = 126~
40 × 42 = 168~

D 20 × 60 = 120~
E 50 × 92 = 460~
F 80 × 14 = 112~
G 60 × 37 = 222~
H 40 × 63 = 252~
I 70 × 29 = 203~

A 100 fifteens = 100 × 15, or 1500
200 fifteens = 200 × 15, or 3000
300 fifteens = 300 × 15, or 4500

B 100 forties = 100 × 40, or 4000
200 forties = 200 × 40, or 8000
300 forties = 300 × 40, or 12000

C 200 × 36 = 7200
300 × 36 = 108~
400 × 36 = 144~

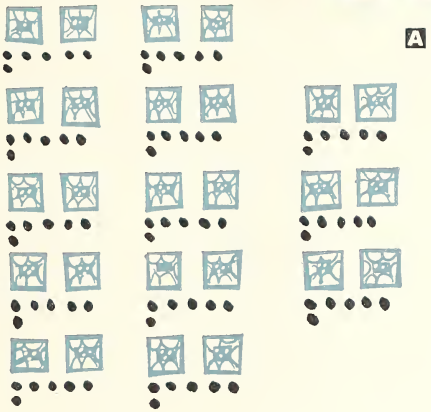
D 200 × 87 = 174~
E 600 × 40 = 240~
F 400 × 39 = 156~
G 300 × 45 = 135~
H 700 × 28 = 196~
I 500 × 19 = 95~

Now you should be able to multiply by numbers like 10, 20, 100, and 200.

Learning how

In this lesson you will learn how to multiply when the multipliers are numbers like 13, 46, or 89.

see



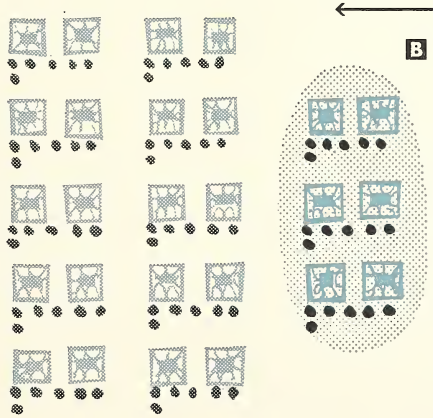
A

13 children in the science class planted seeds in their own gardens. Each child planted 26 seeds. How many seeds did the 13 children plant?

$13 \times 26 = \square$

You must find this number.

Think of 13 as 10 and 3.



B

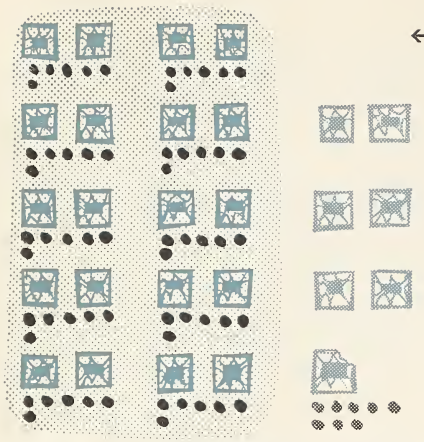
First find how many seeds 3 of the children planted. Imagine that 3 of the groups of 26 seeds are being put together.

$$\begin{array}{r} 26 \\ \times\ 3 \\ \hline 78 \end{array}$$

First multiply 26 by 3.
$3 \times 26 = 78$

This number shows how many seeds 3 children planted.

Now turn the page.



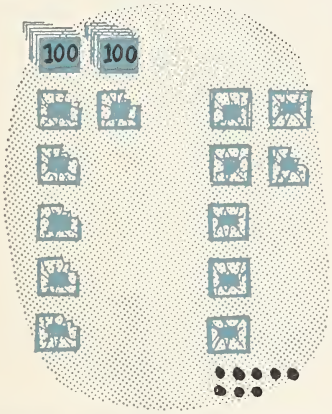
Now find how many seeds 10 children planted. Imagine that the 10 groups of 26 seeds are put together.

C

$$\begin{array}{r} 26 \\ \times\ 10 \\ \hline 260 \end{array}$$

Multiply the 26 by 10.

$10 \times 26 = 260$. This number shows how many seeds 10 children planted.



To find out how many seeds all 13 children planted, imagine that the seeds planted by 3 children and by 10 children are put together.

D

$$\begin{array}{r} 78 \\ +\ 260 \\ \hline 338 \end{array}$$

Add 78 and 260.

The sum of 78 and 260 is 338.

There are 338 seeds in all.

E

$$\begin{array}{r} 26 \\ \times\ 13 \\ \hline 78 \\ 260 \\ \hline 338 \end{array}$$

You should write all of the work in one place, like this.

Seeds 3 children planted

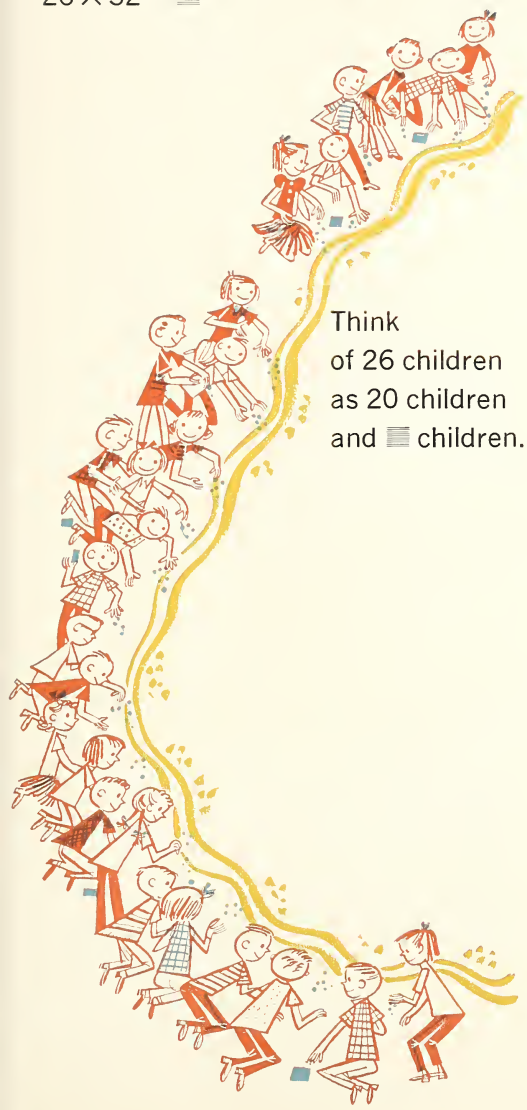
Seeds 10 children planted

Seeds all 13 children planted

The children planted 338 seeds.
$13 \times 26 = 338$

think Another day 26 children planted 32 seeds apiece. How many seeds did the children plant this time?

$26 \times 32 = \square$



Think of 26 children as 20 children and ▩ children.

32
26 ← First find how many seeds ▩ children planted. First multiply 32 by ▩.

32
26
192 ← $6 \times 32 = \square$. This shows how many seeds ▩ children planted.

32
26 ← Now find how many seeds ▩ children planted. Now multiply ▩ by 20.
192

32
26
192
640 ← $20 \times 32 = \square$. Write ▩ under 192 so that you can add. This number shows how many seeds ▩ children planted.

32
26
192 ← Now find how many seeds
640 ← all 26 children planted. How do you do this?
832 ← $192 + 640 = \square$

The children planted ▩ seeds this time.

Now turn the page.

try

A The children saw some tomato plants in a field. There were 12 rows of plants, with 24 plants in each row. How many tomato plants did they see in this field?

$12 \times 24 = \square$

```
  24
  12   ← Think of 12 as 10 and 2.
 ---
  48   ← Number of plants in ▢ rows.
 240   ← Number of plants in ▢ rows.
 ---
 288   ← Number of plants in ▢ rows.
```

B $40 \times 87 = \square$

```
  87
  40   ← There are no ones to multiply by.
 ----
3480
```

C $36 \times 80 = \square$

```
  80
  36
 ---
 480
2400
----
2880
```

D $54 \times 49 = \square$

```
  49
  54
 ---
 196
2450
----
2646
```

E $74 \times 95 = \square$

```
  95
  74
 ---
 380
6650
----
7030
```

do

A 14 children made books of animal pictures. Each book had 28 pictures in it. How many animal pictures were there in the 14 books?

$14 \times 28 = \square$

B 25 other children made books of flower pictures. Each book had 26 pictures in it. How many flower pictures were there in all these books?

$25 \times 26 = \square$

C $20 \times 59 = \square$
D $44 \times 92 = \square$
E $87 \times 18 = \square$
F $63 \times 50 = \square$
G $35 \times 88 = \square$
H $54 \times 25 = \square$
I $46 \times 78 = \square$
J $15 \times 95 = \square$
K $52 \times 60 = \square$

L $72 \times 64 = \square$
M $19 \times 46 = \square$
N $40 \times 77 = \square$
O $12 \times 90 = \square$
P $58 \times 32 = \square$
Q $30 \times 81 = \square$
R $47 \times 62 = \square$
S $95 \times 95 = \square$
T $73 \times 65 = \square$

A $60 \times 95 = \square$
B $50 \times 80 = \square$
C $11 \times 49 = \square$
D $91 \times 62 = \square$
E $17 \times 54 = \square$
F $48 \times 67 = \square$
G $29 \times 38 = \square$
H $12 \times 75 = \square$
I $58 \times 27 = \square$

J $15 \times 66 = \square$
K $95 \times 18 = \square$
L $73 \times 38 = \square$
M $29 \times 46 = \square$
N $13 \times 71 = \square$
O $35 \times 22 = \square$
P $83 \times 44 = \square$
Q $70 \times 37 = \square$
R $69 \times 69 = \square$

Now you should be able to multiply by numbers like 15, 26, or 94.

Using arithmetic

A The fourth-grade children asked the third-grade children to a party. 42 children came from the fourth grade, and 39 children came from the third grade. How many children came to the party?

B 9 of the girls said they would make enough napkins so that each child could have one. Each girl was to make the same number of napkins. How many napkins was each girl to make?

THINK The answer for Problem A tells you how many napkins the girls said they would make altogether.

C One day the children made 35 hats for the party. The next day they made some more. Then John counted the hats and said, "We have made 71 hats." How many hats did they make the second day?

D Ann's mother made 9 dozen sugar cookies for the party. How many cookies did she make altogether? Did she make enough so that each child could have 1 cooky?

THINK How do you know how many children came to the party?

E May's mother made 14 dozen cookies for the party. How many cookies did she make altogether?

F Did May's mother make more or fewer cookies than Ann's mother? How many more or fewer did she make?

THINK Which problem tells you how many cookies Ann's mother made?

G The children needed 14 quarts of ice cream. This amount of ice cream was equal to how many pints?

H 7 quarts of the ice cream they bought were chocolate, and the rest were vanilla. How many quarts of vanilla ice cream did they buy?

THINK From which problem do you get the other number that you need?

I The children bought 96 paper plates. After they had set the tables, they still had 15 paper plates left. How many paper plates had they used to set the tables?

J 27 of the girls made place cards for the party. Each girl made 3 place cards. Did the girls make enough place cards so that each child could have one?

K The children made 40 pints of lemonade. Each pint would fill 2 paper cups. Did they make enough lemonade for each child to have 1 cup? How do you know?

L They also made some games to play at the party. On Monday they made some, and on Tuesday they made 9 more. Bill counted the games and said, "We have made 13 games for our party." How many games had they made on Monday?

M There were 2 prizes for each game. How many prizes were there for all of the games?

THINK How many games did they make?

N Twenty-four mothers made some sandwiches for the party. Each mother made 12 sandwiches. How many sandwiches did they make altogether?

O Some of the fourth-grade children earned $9.50 to help pay for the party. Other fourth-grade children earned $7.25. How much money did these two groups of children earn altogether?

P The total cost of the party was $19.45. How much more money did they still need to pay for the party?

THINK Problem O tells you how much money the fourth graders earned.

Q Some of the children at the party had a race. They had to run 27 feet in the race. How many yards did they have to run?

Keeping skillful

A $48 \times 79 =$ ▒
B $16 \times 85 =$ ▒
C $22 \times 59 =$ ▒
D $73 \times 34 =$ ▒
E $15 \times 97 =$ ▒
F $62 \times 48 =$ ▒
G $45 \times 66 =$ ▒
H $37 \times 25 =$ ▒
I $55 \times 18 =$ ▒
J $84 \times 39 =$ ▒
K $73 \times 93 =$ ▒
L $51 \times 58 =$ ▒
M $43 \times 84 =$ ▒
N $19 \times 27 =$ ▒
O $95 \times 36 =$ ▒

A $24 \times 75 =$ ▒
B $11 \times 92 =$ ▒
C $47 \times 35 =$ ▒
D $32 \times 90 =$ ▒
E $58 \times 44 =$ ▒
F $65 \times 27 =$ ▒
G $88 \times 96 =$ ▒
H $76 \times 19 =$ ▒
I $38 \times 54 =$ ▒
J $29 \times 68 =$ ▒
K $92 \times 45 =$ ▒
L $16 \times 23 =$ ▒
M $64 \times 97 =$ ▒
N $58 \times 46 =$ ▒
O $23 \times 64 =$ ▒

A $10 \times 242 = 2420$
$20 \times 242 = 484$~
$30 \times 242 = 726$~
B $20 \times 110 = 220$~
C $40 \times 312 = 1248$~
D $10 \times 660 = 660$~
E $30 \times 281 = 843$~
F $50 \times 114 = 570$~
G $40 \times 105 = 420$~
H $60 \times 312 = 1872$~
I $20 \times 493 = 986$~
J $10 \times 205 = 205$~
K $30 \times 532 = 1596$~
L $50 \times 212 = 1060$~
M $20 \times 506 = 1012$~

Keeping skillful

A $36 \times 597 =$ ▒

$$\begin{array}{r} 597 \\ 36 \\ \hline 3582 \\ 17910 \\ \hline 21492 \end{array}$$

First multiply by ▒.
Then multiply by 30.
How do you get this number?
How do you get this number?

B $50 \times 305 =$ ▒

$$\begin{array}{r} 305 \\ 50 \\ \hline 15250 \end{array}$$

What do you multiply by here?

A $82 \times \$1.57 =$ ▒

$$\begin{array}{r} \$1.57 \\ 82 \\ \hline 3.14 \\ 125.60 \\ \hline \$128.74 \end{array}$$

Some people do not put a point in these numbers.
Always put a point and a dollar sign in the answer.

B $70 \times \$.18 =$ ▒

$$\begin{array}{r} \$.18 \\ 70 \\ \hline \$12.60 \end{array}$$

C $23 \times 708 =$ ▒	**H** $85 \times 260 =$ ▒	**C** $46 \times \$1.15 =$ ▒	**H** $97 \times \$3.65 =$ ▒
D $37 \times 923 =$ ▒	**I** $43 \times 825 =$ ▒	**D** $16 \times \$.45 =$ ▒	**I** $76 \times \$1.19 =$ ▒
E $50 \times 612 =$ ▒	**J** $70 \times 109 =$ ▒	**E** $82 \times \$.25 =$ ▒	**J** $43 \times \$.22 =$ ▒
F $94 \times 403 =$ ▒	**K** $58 \times 431 =$ ▒	**F** $60 \times \$2.29 =$ ▒	**K** $29 \times \$5.80 =$ ▒
G $18 \times 940 =$ ▒	**L** $95 \times 226 =$ ▒	**G** $78 \times \$4.12 =$ ▒	**L** $36 \times \$.78 =$ ▒

Side trip

A 3400
three thousand four hundred
thirty-four hundred

B 7615
seven thousand six hundred fifteen
seventy-six hundred fifteen

Read in two ways.

A 2812	**F** 4258	**K** 7072
B 5786	**G** 6700	**L** 2965
C 3819	**H** 9001	**M** 1070
D 1468	**I** 8375	**N** 5900
E 7500	**J** 4000	**O** 8111

Using arithmetic

A One Saturday afternoon Jim's father took 12 boys to a baseball game. The tickets for the boys cost 35¢ apiece. How much did Jim's father pay for all of the boys' tickets?

B Six of the boys earned money for the baseball game by helping their fathers in the garden. Each boy earned $2.75 in this way. How much did all of these boys earn?

C At the baseball game, 7 of the boys bought boxes of popcorn. The popcorn cost 15¢ a box. How much in all did the popcorn cost?

D In the baseball game, the first team made 13 hits, and the second team made only 8 hits. How many fewer hits did the second team make than the first team?

E Jim's father bought 26 hamburgers during the baseball game. Each one cost 20¢. How much did he pay for all the hamburgers?

F 8 of the boys bought large pennants that cost 65¢ apiece. How much did all of these large pennants cost?

G Small pennants cost 35¢ apiece. A small pennant cost how much less than a large pennant?

H Jim's father said that the distance from home plate to the fence was 128 yards. How many feet was this?

I The first inning of the game lasted 25 minutes. The second inning lasted only 12 minutes. How many fewer minutes did the second inning last than the first inning?

J Jim's father bought ice-cream cones for the 12 boys. 9 of the boys wanted chocolate cones, and the others wanted vanilla cones. How many of the boys wanted vanilla cones?

K The ice-cream cones cost $1.20 in all. Jim's father gave the man $5. How much money should the man have given him in change?

L David bought a baseball cap for 85¢. He also bought a baseball bat for $1.95. How much did he pay for these two things?

M Bill had some money to spend at the game. He paid $1.29 for a new baseball. Then he had $1.71 left. How much money did he have to start with?

N In the baseball game each team used 13 players. How many players did the two teams use?

O The baseball cap that Jim wanted to buy cost 85¢, but he had only 38¢ left. His father gave him the rest of the money for the cap. How much money did his father give him?

P Each of six boys bought a bag of peanuts. Each bag cost $.25. How much did all of the bags cost?

Q There were 23 rows of seats where the boys were sitting. Each row had 15 seats. How many seats were there in these rows?

R The distance from one base to the next base was 90 feet. What was the total distance around all 4 bases?

S The baseball game lasted for two hours. How many minutes was this?

T Jack counted the lights on 4 poles at the ball field. There were 18 lights on each pole. How many lights in all did Jack count?

U Bob counted the lights on the other 3 poles at the ball field. There were also 18 lights on each pole that he counted. How many lights in all did Bob count?

V There were how many lights in all at the ball field?

THINK The answers for Problems T and U tell you how many lights Jack and Bob counted.

W Did Jack count more or fewer lights than Bob? How many more or fewer lights did he count?

Checking up

Test 1	Test 2	Test 3	Test 4
A $8 \times 248 =$ ▒	A $47 \times 65 =$ ▒	A $76 \times 402 =$ ▒	A $5 \times \$.19 =$ ▒
B $3 \times 957 =$ ▒	B $59 \times 84 =$ ▒	B $29 \times 113 =$ ▒	B $38 \times \$6.24 =$ ▒
C $5 \times 700 =$ ▒	C $91 \times 78 =$ ▒	C $58 \times 765 =$ ▒	C $72 \times \$1.06 =$ ▒
D $7 \times 88 =$ ▒	D $14 \times 29 =$ ▒	D $19 \times 284 =$ ▒	D $40 \times \$.25 =$ ▒
E $4 \times 674 =$ ▒	E $36 \times 20 =$ ▒	E $67 \times 590 =$ ▒	E $69 \times \$5.13 =$ ▒
F $2 \times 950 =$ ▒	F $60 \times 58 =$ ▒	F $41 \times 326 =$ ▒	F $24 \times \$.86 =$ ▒
G $6 \times 807 =$ ▒	G $24 \times 95 =$ ▒	G $90 \times 605 =$ ▒	G $87 \times \$4.60 =$ ▒
H $9 \times 564 =$ ▒	H $72 \times 18 =$ ▒	H $32 \times 948 =$ ▒	H $10 \times \$.50 =$ ▒
I $8 \times 39 =$ ▒	I $83 \times 36 =$ ▒	I $84 \times 851 =$ ▒	I $9 \times \$9.18 =$ ▒
J $4 \times 775 =$ ▒	J $50 \times 44 =$ ▒	J $68 \times 797 =$ ▒	J $15 \times \$.75 =$ ▒
K $5 \times 90 =$ ▒	K $38 \times 64 =$ ▒	K $47 \times 130 =$ ▒	K $58 \times \$2.20 =$ ▒
L $8 \times 113 =$ ▒	L $49 \times 80 =$ ▒	L $12 \times 977 =$ ▒	L $7 \times \$5.35 =$ ▒

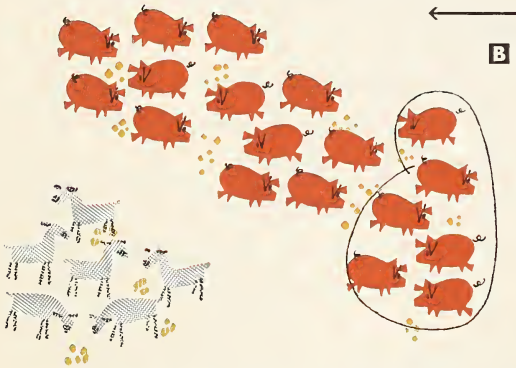
Exploring problems

see

A

Mr. White told David he had 18 baby pigs and 6 lambs. Mr. White had how many times as many pigs as lambs?

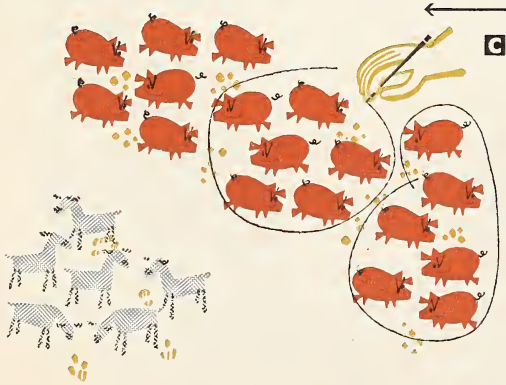
18 ← Number of pigs Mr. White had



B

Think of the 18 pigs as divided into groups of 6. Each group of 6 will be equal to the group of lambs.

$18 \div 6$ ← Divide by 6 because you think of the pigs in groups of 6.



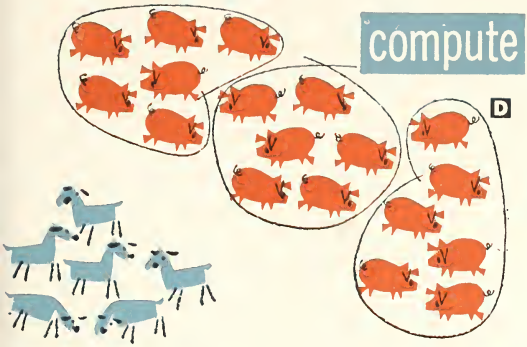
C

Find how many groups of 6 pigs there are in 18 pigs. The number of groups of 6 tells how many times as many pigs as lambs there were.

$18 \div 6 = \square$

Number of groups of 6. It tells you how many times as many pigs as lambs there were.

You must find this number.



compute

D

Divide the pigs into groups of 6.

$$6\overline{)18}\quad 3$$

← 18 is 3 times as large as 6.

Mr. White had 3 times as many baby pigs as lambs.

---

see

A

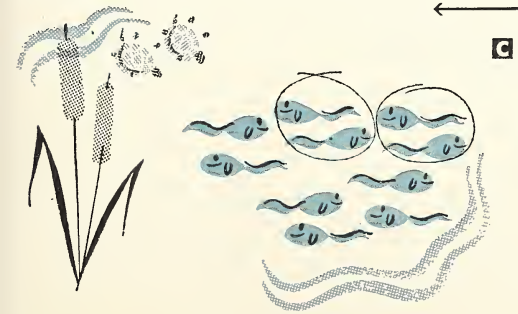
In a pond on Mr. White's farm, David caught 2 turtles and 10 tadpoles. He caught how many times as many tadpoles as turtles?

10 ← What does this number stand for?

B

← Think of the ~~ as divided into groups. Each group will be equal to the group of ~~. Think of the tadpoles in groups of ▒.

$10 \div 2$ ← Why do you divide by 2?



C

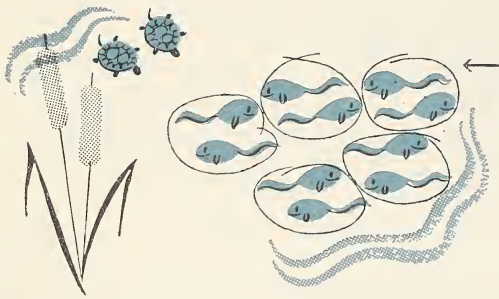
← Find how many times you can make a group of ▒ tadpoles.

$10 \div 2 = \square$ ← What will this number tell you?

Now turn the page.

compute

D



Divide the tadpoles into groups of ▭.

▭ ← 10 is ▭ times 2.

$2\overline{)10}$

David caught ▭ times as many tadpoles as turtles.

A David counted 3 black baby chicks and 24 yellow baby chicks. He counted how many times as many yellow chicks as black ones?

Number of yellow chicks.
Number of yellow chicks equal to black chicks.
Number of groups of 3 yellow chicks.

$24 \div 3 = \square$

You must find this number.

Divide 24 by 3.
David counted ▭ times as many yellow chicks as black ones.

B Mrs. White said that she had 9 ducks and 54 chickens. How many times as many chickens as ducks did she have?

$54 \div 9 = \square$

C David and Mrs. White used 6 pails of chicken feed and 2 pails of corn for the chickens and ducks. How many times as much chicken feed as corn did they use?

$6 \sim\sim 2 = \square$

D David helped Mr. White plant 3 rows of carrots and 9 rows of tomato plants. They planted how many times as many rows of tomatoes as carrots?

$9 \sim\sim 3 = \square$

E Mr. White said that he had 64 apple trees and 8 peach trees. He had how many times as many apple trees as peach trees?

F Mrs. White gave David's mother 4 jars of strawberries and 8 jars of tomatoes. Mrs. White gave her how many more jars of tomatoes than of strawberries?

G Mrs. White said that last year she canned 63 quarts of tomatoes and 9 quarts of tomato juice. She canned how many times as many quarts of tomatoes as tomato juice?

H Mrs. White also canned 45 quarts of peaches. How many fewer quarts of peaches than of tomatoes did she can?

I Bill and David timed themselves when they picked strawberries. It took Bill 5 minutes to pick a box of berries. It took David 10 minutes. It took David how many times as long as Bill to pick a box of strawberries?

J Bill White is 9 years old. His brother Jim is 18 years old. Jim is how many times as old as Bill?

K Jim is how much older than Bill?

L Bill said that they had a horse named Peg that was 20 years old and a horse named Tony that was 5 years old. Peg was how many times as old as Tony?

M Tony was how much younger than Peg?

N David rode Tony for 20 minutes each day he was on the farm. David was on the farm for 4 days. He spent how many minutes in all riding Tony?

Now you should be able to find how many times as large one group is as another group.

Keeping skillful

A $81 \div 9 = \square$
B $63 \div 7 = \square$
C $40 \div 5 = \square$
D $72 \div 8 = \square$
E $54 \div 9 = \square$
F $64 \div 8 = \square$
G $42 \div 6 = \square$
H $56 \div 7 = \square$
I $48 \div 8 = \square$
J $54 \div 6 = \square$
K $72 \div 9 = \square$
L $45 \div 5 = \square$

A $72 \times 5 = \square$
B $46 \times 2 = \square$
C $7 \times 85 = \square$
D $3 \times 209 = \square$
E $417 \times 8 = \square$
F $6 \times 530 = \square$
G $14 \times 63 = \square$
H $32 \times 89 = \square$
I $28 \times 53 = \square$
J $56 \times 171 = \square$
K $83 \times 426 = \square$
L $59 \times 308 = \square$

A $\square + 431 = 609$
B $718 - 216 = \square$
C $536 - \square = 94$
D $18 \times 703 = \square$
E $628 + 75 + 290 = \square$
F $2354 + \square = 6179$
G $\square - 860 = 448$
H $3000 - 2410 = \square$
I $26 + 65 + 85 = \square$
J $9 \times 240 = \square$
K $\square - 217 = 529$
L $\square + 4892 = 7930$

Using arithmetic

A 24 children went roller skating. 8 of them had roller skates. The others did not have skates. How many children did not have roller skates?

B The number of children without skates was how many times the number of children with roller skates?

THINK Why do you use 16 and 8?

C The children who did not have skates rented some. 5 of these children used the skates for just one hour. The others who rented skates used them for 2 hours. How many children rented skates for 2 hours?

D Skates rented for 25¢ an hour. How much did those children who rented skates for 1 hour pay altogether for the use of the skates?

E Those children who rented skates for 2 hours paid 50¢ apiece. How much did these children pay altogether for the use of the skates?

F 15 children took a boat ride. The ride cost 35¢ for each person. How much did all of the children who took the boat ride have to pay?

G 12 boys played marbles. 3 boys played in each ring. How many rings were there?

H 4 boys played horseshoes. The distance from one post to the other was 27 ft. How many yards was this?

I The number of boys who played marbles was how many times the number of boys who played horseshoes?

THINK From which problems do you get the numbers you need?

J 18 children were swimming in the pool. Each child had paid 25¢ to swim in the pool. How much altogether did it cost these children to swim in the pool?

K In the afternoon 14 more children came to the pool. How many children were using the pool then?

L 24 boys and 8 girls were swimming in the pool. The number of boys was how many times the number of girls?

M Some of the children who were swimming went home. Then only 11 children were left in the pool. How many children went home?

N The water at one end of the pool was 10 ft. deep. At the other end the water was 2 ft. deep. The water at the deep end was how many times as deep as the water at the other end?

O 13 girls were making presents for their friends. 6 of them were stringing beads, and the rest were making pins. How many girls were making pins?

P Sue had some beads to use for stringing. After using 38 of them, she found she had 27 beads left. How many beads did Sue have at first?

Q 18 children were riding ponies. They rode in 2 groups. How many children were riding in each group?

R 27 children paid 15¢ an hour to rent bicycles. How much did they all pay to rent the bicycles for 1 hour?

S 19 of the children who rented bicycles left. The others were still riding their bicycles. How many children were still riding bicycles?

T Tony and Jim were making puppets for a show. They made some puppets before lunch and 7 more after lunch. Altogether they made 12 puppets. How many did they make before lunch?

Keeping skillful

A $263 \times \$.78 = \square$

$$\begin{array}{r} 263 \\ \$.78 \\ \hline 21.04 \\ 184.10 \\ \hline \$205.14 \end{array}$$

It is easier to multiply by the smaller number.

Remember to put the point and dollar sign in the answer.

B $584 \times \$.09 = \square$

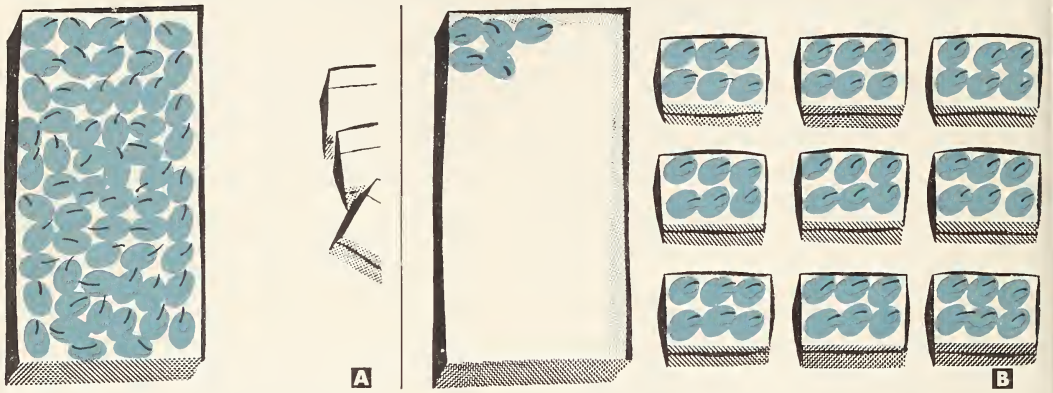
$$\begin{array}{r} 584 \\ \$.09 \\ \hline \$52.56 \end{array}$$

A $26 \times \$.07 = \square$
B $49 \times \$1.48 = \square$
C $274 \times \$.11 = \square$
D $829 \times \$.05 = \square$
E $692 \times \$.14 = \square$
F $2 \times \$.76 = \square$
G $58 \times \$.02 = \square$

A $\square + \$.37 = \$1.18$
B $\$4.35 - \square = \$.95$
C $575 \times \$.07 = \square$
D $\$.68 + \$3.49 = \square$
E $\square - \$.55 = \$1.10$
F $226 \times \$.85 = \square$
G $\$4.30 - \$2.86 = \square$

H $85 \times \$.04 = \square$
I $\square + \$.17 = \$.35$
J $\$4.17 - \$.70 = \square$
K $\$6.92 + \$9.64 = \square$
L $\square - \$7.83 = \$2.17$
M $\$5.06 + \square = \$9.00$
N $419 \times \$.45 = \square$

Exploring problems



A A grocer had 59 peaches. He made as many baskets of 6 peaches as he could. How many baskets did he make? How many peaches were left over?

$59 \div 6 = \square$ You must find this number.

In Picture B the 59 peaches are divided into groups of 6.
$59 \div 6 = 9$ and ▩ remainder.
There are ▩ groups of 6 peaches.
There are 5 peaches left over.

B The grocer wanted to put 27 cans of soup into piles of 6 cans each. How many piles could he make? How many cans would be left over?

THINK $27 \div 6 =$ ▩ and ▩ remainder.
He could make ▩ piles. ▩ cans would be left over.

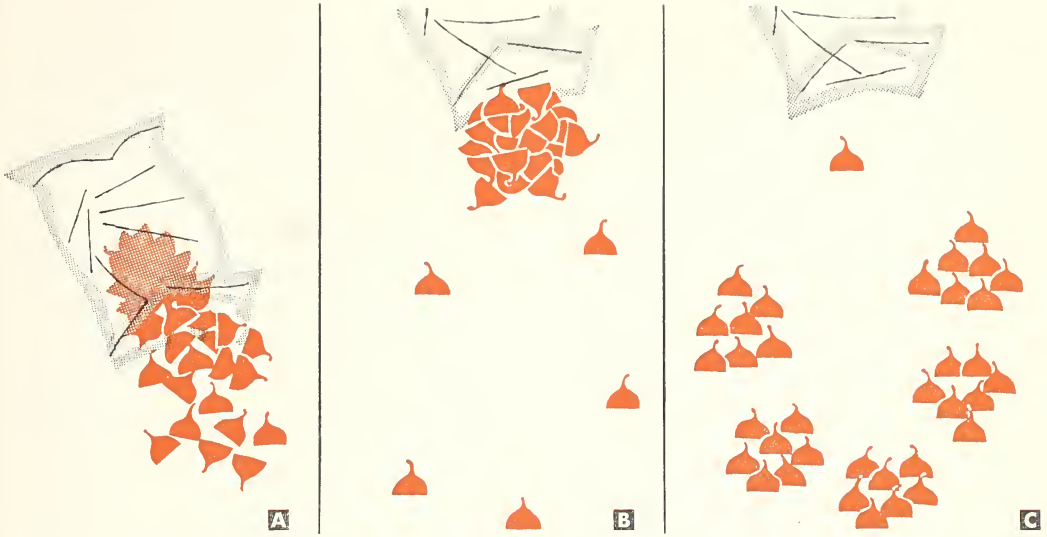
C Candy bars cost 5¢ each. John had 24¢ to spend. How many bars could he buy? How many cents would be left?

THINK $24 \div 5 =$ ▩ and ▩ remainder.
He could buy ▩ candy bars. He would have ▩¢ left over.

D Tony's mother sent him to the store to buy 50¢ worth of rolls. The rolls cost 6¢ each. How many rolls could Tony buy? How much money would he have left?
$50 \div 6 =$ ▩ and ▩ remainder

E Cat food cost 9¢ a can. How many cans of food could Peggy buy for 40¢? How much money should the grocer give her in change?

THINK When you divide in Problem E, the remainder tells you how much money Peggy should get in change.



A Five boys bought a bag of candy and counted the pieces so that they could share them equally. There were 36 pieces in the bag. How many pieces could each boy have? How many pieces were left over?

$36 \div \square = 5$ You must find this number.

Look at Picture B. The boys put the pieces in 5 equal groups. Each time they took 1 candy apiece, they took a group of 5 candies. You can say that they divided the pieces into groups of 5.

Now look at Picture C. Each boy got 7 pieces of candy. One piece of candy was left over.

$36 \div 5 = 7$ and $\square$ remainder

B The grocer had 37 cans of fruit. He wanted to put them in 6 piles, with the same number of cans in each pile. How many cans should he have put in each pile? How many cans would be left over?

$37 \div \square = 6$ Divide 37 by 6.

C He also wanted to put 45 cans of tomatoes in 7 piles, with the same number of cans in each pile. How many cans should he have put in each pile? How many cans would be left over?

$45 \div \square = 7$ Divide 45 by 7.

D One afternoon the grocer had 22 bananas left. 4 people wanted to buy them. If they shared the bananas equally, how many could each person buy? How many bananas would be left?

$22 \div \square = 4$ Divide 22 by 4.

A Mrs. Young bought 27 cans of fruit drink. The cans came in cartons of 6. How many cartons did she buy? How many other cans did she buy?

THINK When you divided, did the remainder tell you how many other cans Mrs. Young bought?

B Mrs. Wall bought 31 cans of fruit drink. How many cartons of 6 did she buy? How many other cans?

C Mrs. Wall saw some large peaches that cost 9¢ each. How many of these peaches could she buy for 65¢? How much money should she get in change?

D Large oranges cost 8¢ apiece. How many of these oranges could Mrs. Young buy for 35¢? How much money should she get in change?

E The grocer had 51 oranges to put into 8 bags. He put the same number of oranges into each bag and used as many of the 51 oranges as he could. How many oranges did he put into each bag? How many oranges were left over?

F Lollipops cost 5¢ each. How many lollipops could Peggy buy for 18¢? How much money should she have left?

Now, when you divide, you should understand what the remainder means.

Side trip

John's way 4-18-47

Tom's way 4/18/47

A The ring on the calendar shows when John was born. Look at his way of writing this date. He wrote 4 because April is the fourth month. Why did he write 18 and 47?

B How is Tom's way of writing this date different from John's?

C When were you born? Write the date in two ways.

Write each of the dates below in two ways.

D June 3, 1952 6–▒–▒ 6/▒/▒

E July 26, 1955 7–▒–▒ 7/▒/▒

F May 22, 1956

G January 1, 1949

H March 23, 1904

I September 30, 1951

Thinking straight

	1950 population	John	Don
Bombay	2,839,270	3,000,000	2,800,000
Chicago	3,620,962	4,000,000	3,600,000
Detroit	1,849,568	2,000,000	1,800,000
London	8,346,137	8,000,000	8,300,000
Los Angeles	1,970,358	2,000,000	2,000,000
Montreal	1,395,400	1,000,000	1,400,000
New York	7,891,957	8,000,000	7,900,000
Philadelphia	2,071,605	2,000,000	2,100,000

A Betty looked up the populations of the large cities given above. Would it be hard for you to remember these populations? Why?

B John rounded off each population to the nearest million. Is it easier to remember the populations that John has written? Why?

C Why did John round off the population of the first city to 3,000,000 and not to 2,000,000?

D Can you use John's figures to write the cities in the order of their size? Why?

E Don rounded off each population to the nearest hundred thousand. Can you use Don's figures to write the cities in the order of their size?

F Both John and Don rounded off the population of Los Angeles to 2,000,000. Why?

G Here are the populations of 6 cities:

64,430	51,088	97,249
96,815	63,774	94,080

Round off these numbers.

H Can you use your figures to write these cities in the order of their size?

Keeping skillful

A $56 \div 8 =$ ▒
B $36 \div 6 =$ ▒
C $45 \div 9 =$ ▒
D $54 \div 9 =$ ▒
E $64 \div 8 =$ ▒
F $54 \div 6 =$ ▒
G $63 \div 9 =$ ▒
H $40 \div 8 =$ ▒
I $36 \div 4 =$ ▒
J $45 \div 5 =$ ▒
K $56 \div 7 =$ ▒
L $81 \div 9 =$ ▒
M $72 \div 8 =$ ▒
N $49 \div 7 =$ ▒
O $40 \div 5 =$ ▒
P $36 \div 9 =$ ▒
Q $42 \div 6 =$ ▒
R $63 \div 7 =$ ▒
S $72 \div 9 =$ ▒
T $42 \div 7 =$ ▒

Checking up

Test 1

A 156 children saw the school play. 65 children saw it in the morning. The others saw it in the afternoon. How many children saw the school play in the afternoon?

B 82 of the children who saw the play were girls. 74 were boys. How many more girls than boys saw the play?

C In the morning 32 children came to the play at first. More children came in later. Then there were 65 children at the play. How many children came in later?

D Sixteen boys and eight girls were in the play. How many children were in the play?

E The play was given a third time in the evening. Tickets for grown-ups cost 20¢. Tickets for children cost 5¢. A ticket for a grown-up cost how many times as much as a ticket for a child?

F 125 grown-ups saw the play. At 20¢ each, how much did their tickets cost altogether?

G Eighty-six children saw the play in the evening. At 5¢ each, how much did their tickets cost altogether?

H Mary sold fruit drinks during the evening. When she started, she had some money to make change. She sold $5.60 worth of fruit drinks. Then she had $7. How much money did she have to make change when she started?

I Tony had some money to spend. He spent 8¢ for a fruit drink, and then he had 37¢ left. How much money did he have at first?

J Peggy came to the play with 38¢. She bought ice cream and a fruit drink. Then she had 15¢ left. How much money had she spent?

K Carol bought ice-cream cones for herself and 7 friends. She spent 40¢ for them. How much did each of the 8 ice-cream cones cost?

L David spent $.25 at the play, and Tom spent $.30. David spent how much less than Tom?

M John paid 35¢ for some dishes of ice cream. Each dish cost 7¢. How many dishes of ice cream did he buy?

N Nancy spent $.35, Jane spent $.40, and Carol spent $.40. How much in all did these 3 girls spend?

Test 2

A 15 lb. = ▒ oz.
B 3 yd. = ▒ in.
C 27 ft. = ▒ yd.
D 36 qt. = ▒ gal.
E 15 wk. = ▒ da.
F 64 pt. = ▒ gal.
G 4 hr. = ▒ min.
H 21 da. = ▒ wk.
I 3 min. = ▒ sec.
J 7 lb. = ▒ oz.

Test 3

A 285 + 97 = ▒
B 63 + 19 + 22 = ▒
C 496 + 313 = ▒
D 923 + 104 = ▒
E 28 + 19 + 47 = ▒
F 74 + 33 + 96 = ▒
G 480 + 300 = ▒
H 691 + 179 = ▒
I 780 + 333 = ▒
J 38 + 95 + 75 = ▒

Test 4

A 505 − 38 = ▒
B 1103 − 280 = ▒
C 725 − 119 = ▒
D 2731 − 685 = ▒
E 900 − 342 = ▒
F 311 − 276 = ▒
G 4800 − 1074 = ▒
H 623 − 548 = ▒
I 2513 − 1806 = ▒
J 820 − 343 = ▒

Test 5

A 63 × 405 = ▒
B 27 × 19 = ▒
C 100 × 37 = ▒
D 8 × 924 = ▒
E 34 × 721 = ▒
F 58 × 607 = ▒
G 362 × 7 = ▒
H 90 × 86 = ▒
I 46 × 319 = ▒
J 5 × 300 = ▒

Test 6

A 81 ÷ 9 = ▒
B 36 ÷ 6 = ▒
C 40 ÷ 8 = ▒
D 54 ÷ 9 = ▒
E 27 ÷ 3 = ▒
F 42 ÷ 7 = ▒
G 35 ÷ 5 = ▒
H 72 ÷ 8 = ▒
I 56 ÷ 7 = ▒
J 45 ÷ 5 = ▒

Test 7

A ▒ + 326 = 600
B 81 + 94 + 38 = ▒
C 980 + 648 = ▒
D 563 + ▒ = 633
E ▒ + 101 = 547
F 294 + ▒ = 411
G 347 + ▒ = 926
H ▒ + 210 = 768
I 812 + 719 = ▒
J 416 + ▒ = 605

Test 8

A 503 − ▒ = 420
B 911 − 114 = ▒
C 239 − ▒ = 149
D ▒ − 600 = 815
E 820 − 579 = ▒
F ▒ − 362 = 904
G 703 − ▒ = 500
H 614 − 175 = ▒
I ▒ − 286 = 432

Test 9

A 40 ÷ 5 = ▒
B 48 ÷ ▒ = 6
C 35 ÷ 7 = ▒
D 24 ÷ 3 = ▒
E 63 ÷ ▒ = 7
F 20 ÷ ▒ = 4
G 18 ÷ 6 = ▒
H 36 ÷ ▒ = 9
I 21 ÷ 7 = ▒

Test 10

A 386 + 219 = ▒
B 65 × 306 = ▒
C ▒ − 394 = 62
D 64 ÷ ▒ = 8
E 72 ÷ 9 = ▒
F 808 − 779 = ▒
G 531 + ▒ = 807
H ▒ + 95 = 110
I ▒ − 480 = 28

Learning how

In this lesson you will learn how to divide when the answer has two figures.

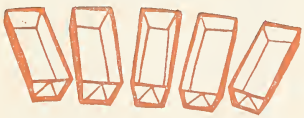
see

A

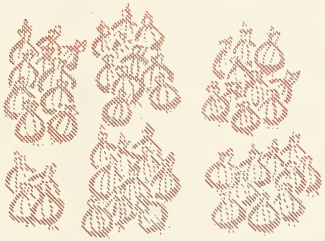
The fourth graders are going to plant 54 flower bulbs in pans. They will put 4 bulbs in a pan. How many pans of 4 bulbs will they have? Will any bulbs be left over?

$54 \div 4 = \square$ ← You must find this number.

B



← Let us start with 5 pans of 4 bulbs.



$4\overline{)54}$ 5 ← We will start with 5 groups of 4 bulbs.

C

← To fill 5 pans, we will use 5×4, or 20 bulbs.

$4\overline{)54}$ 5
20 ← We write 20 here so that we can subtract it from 54 to find how many bulbs are left.

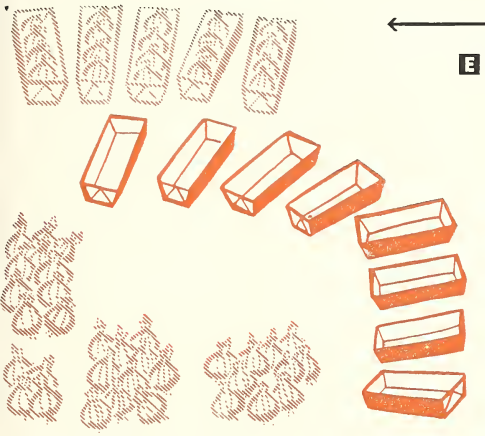
$5 \times 4 = 20$.

How many bulbs are left to be put in pans?

D

$$\begin{array}{r|l} 4\overline{)54} & 5 \\ 20 & \\ \hline 34 & \end{array}$$

There are 34 bulbs left.

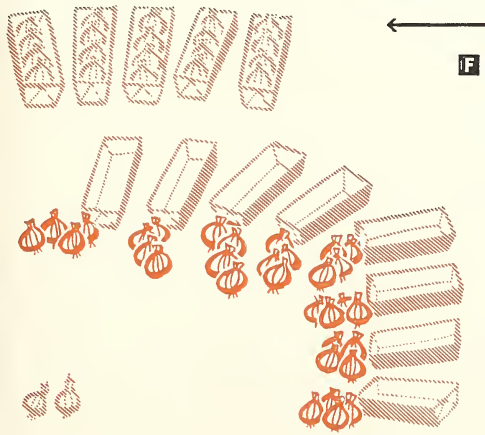


Let us try 8 more pans of 4 bulbs.

E

$$\begin{array}{r|l} 4\overline{)54} & 5 \\ 20 & \\ \hline 34 & 8 \end{array}$$

We will use 8 more groups of 4 bulbs.



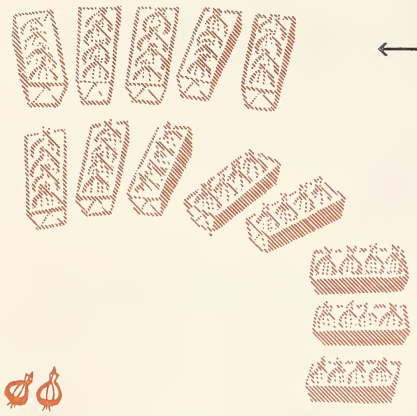
This time we used 8×4, or 32 more bulbs.

F

$$\begin{array}{r|l} 4\overline{)54} & 5 \\ 20 & \\ \hline 34 & 8 \\ 32 & \\ \hline \end{array}$$

$8 \times 4 = 32$.
We write 32 here so that we can subtract to find how many bulbs are left.

Now turn the page.



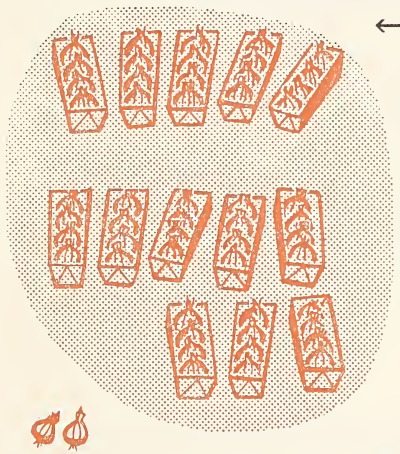
There are only 2 bulbs left over.

G

$$\begin{array}{r|l} 4\overline{)54} & 5 \\ 20 & \\ \hline 34 & 8 \\ 32 & \\ \hline 2 & \end{array}$$

When we subtract, there is a remainder of 2.

There will be 13 pans of 4 bulbs.



There are 2 bulbs left over.

H

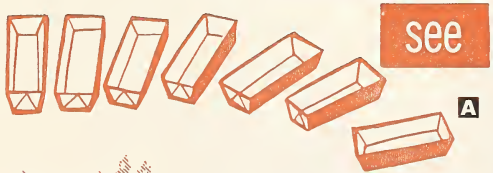
Add 5 and 8.

$$\begin{array}{r|l} 4\overline{)54} & 5 \\ 20 & \\ \hline 34 & 8 \\ 32 & \\ \hline 2 & 13 \end{array}$$

There will be 13 full pans of bulbs.

2 bulbs will be left over.

$54 \div 4 = 13$ and 2 remainder



see

We will work the same problem again.

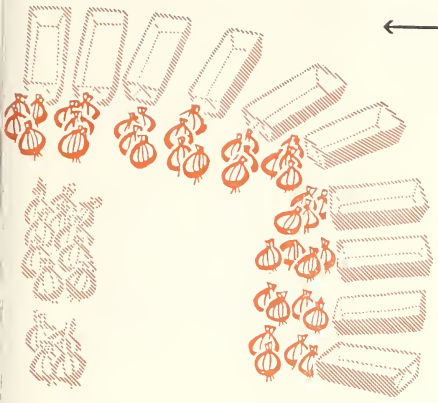
A

$54 \div 4 =$ ▒

Start with 10 pans of 4 bulbs this time.

$$\begin{array}{r|l} 4\overline{)54} & 10 \end{array}$$

We will use 10 fours at first.



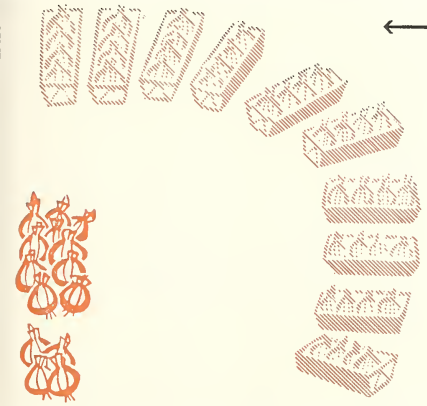
We will use 10×4, or 40 bulbs.

B

$$\begin{array}{r|l} 4\overline{)54} & 10 \\ \underline{40} & \\ & \end{array}$$

$10 \times 4 = 40$.

We write 40 here so that we can subtract it from 54.

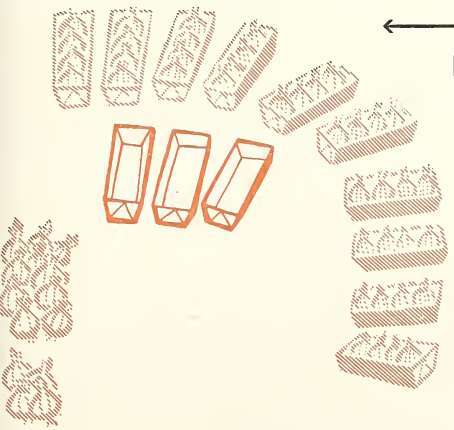


14 bulbs are left to be put in pans of 4.

C

$$\begin{array}{r|l} 4\overline{)54} & 10 \\ \underline{40} & \\ 14 & \end{array}$$

When we subtract, 14 is left to be divided by 4.



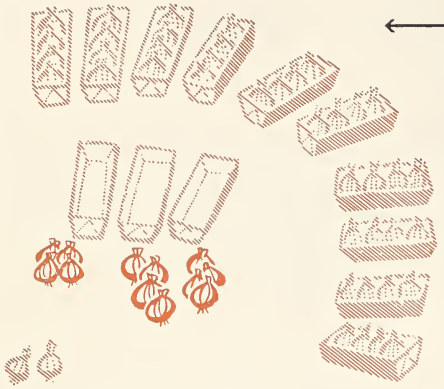
Try 3 more pans of 4 bulbs.

D

$$\begin{array}{r|l} 4\overline{)54} & 10 \\ \underline{40} & \\ 14 & 3 \end{array}$$

Use 3 more fours.

Now turn the page.



We have used 3×4, or 12 more bulbs.

E

$$\begin{array}{r|l} 4\overline{)54} & 10 \\ 40 & \\ \hline 14 & 3 \\ 12 & \\ \hline \end{array}$$

$3 \times 4 = 12$.
We write 12 here so that we can subtract it from 14.

How many bulbs are left over?

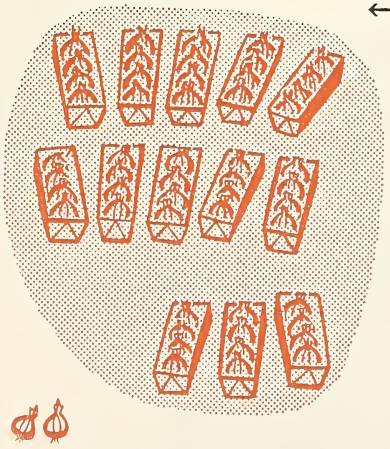
F

$$\begin{array}{r|l} 4\overline{)54} & 10 \\ 40 & \\ \hline 14 & 3 \\ 12 & \\ \hline 2 & \end{array}$$

When we subtract, there is a remainder of 2.

How many full pans of bulbs will there be?

How many bulbs will be left over?



G

Add 10 and 3.

$$\begin{array}{r|l} 4\overline{)54} & 10 \\ 40 & \\ \hline 14 & 3 \\ 12 & \\ \hline 2 & 13 \end{array}$$

There are 13 fours.

There is a remainder of 2.

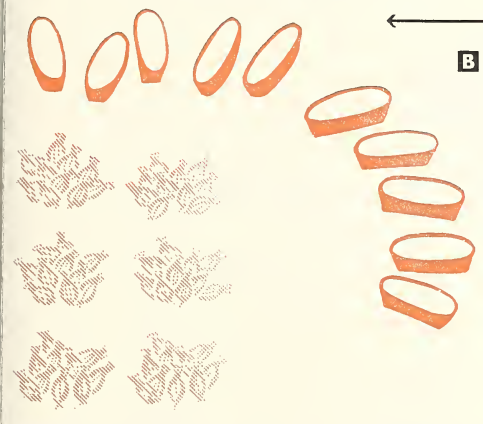
$54 \div 4 = 13$ and 2 remainder

think

A

These 60 bulbs are also going to be planted in pans. There will be 3 bulbs in a pan. How many full pans will there be? Will any bulbs be left over?

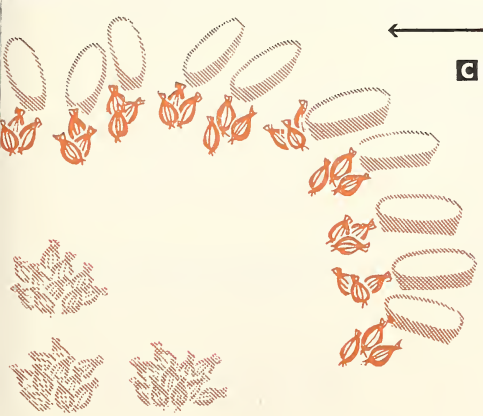
$60 \div 3 = \square$ ← You must find this number.



← How many pans of 3 bulbs do you try at first?

B

$3\overline{)60}\,|\,10$ ← First try ▒ threes.



← You have used $10 \times$ ▒, or ▒ bulbs.

C

$3\overline{)60}\,|\,10$

$\underline{30}$ ← How do you get the 30? The 30 shows that you have used ▒ threes.

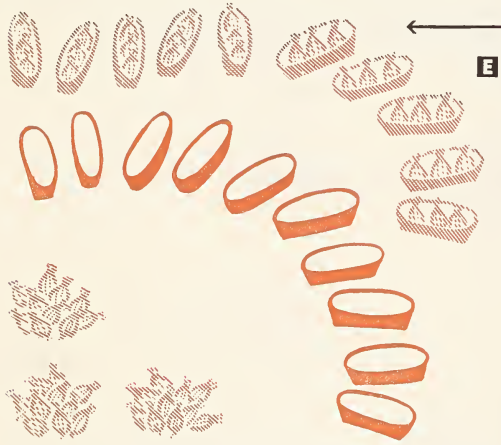
Now turn the page.

How many bulbs are left to be put in pans of 3?

D

$$3\overline{)60}\ 10$$
$$30$$
$$30$$

How do you get this 30? What does this 30 show?

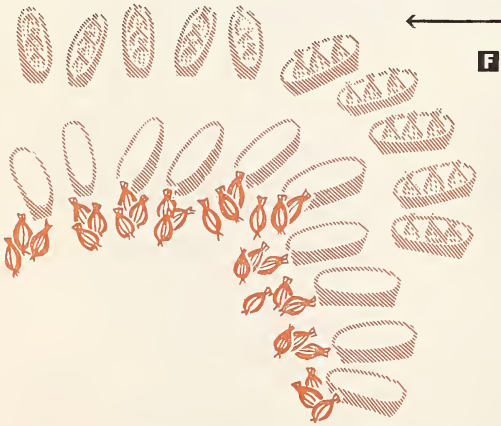


Try ▒ more pans of 3 bulbs.

E

$$3\overline{)60}\ 10$$
$$30$$
$$30\ \ 10$$

Try ▒ more threes.

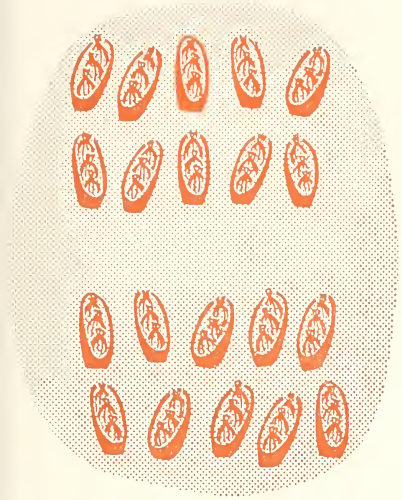


How many bulbs have you used this time?

F

$$3\overline{)60}\ 10$$
$$30$$
$$30\ \ 10$$
$$30$$

How do you get this 30?



How many pans of 3 bulbs will there be? Will any bulbs be left over?

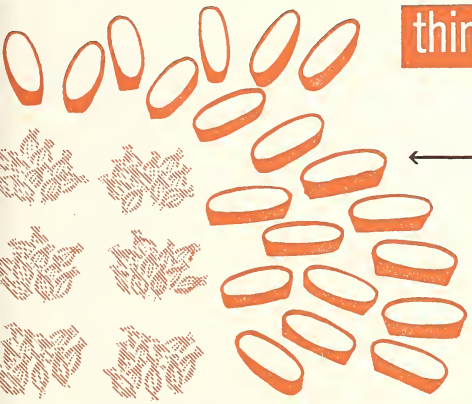
G

What do you do now?

$$\begin{array}{r|l} 3\overline{)60} & 10 \\ \underline{30} & \\ 30 & 10 \\ \underline{30} & \\ 20 & \end{array}$$

What does the 20 mean? Is there a remainder?

$60 \div 3 = \square$



think

A

You can find the answer for the same problem in this way.

Try $\square$ pans of 3 bulbs.

$$3\overline{)60} \quad 20$$

Try $\square$ threes.

B

Is 20 pans the right answer? How do you know?

$$\begin{array}{r|l} 3\overline{)60} & 20 \\ \underline{60} & \end{array}$$

How do you get this 60? What does it show?

How do you know that you have finished working the problem? What is the answer?

try

A 509 ÷ 8 = ▢

8)509	20
160	
349	40
320	
29	3
24	
5	63

8)509	30
240	
269	30
240	
29	3
24	
5	63

8)509	50
400	
109	10
80	
29	3
24	
5	63

8)509	60
480	
29	3
24	
5	63

509 ÷ 8 = ▢ and ▢ remainder

B 147 ÷ 3 = ▢

3)147	10
30	
117	10
30	
87	20
60	
27	9
27	
	49

3)147	10
30	
117	30
90	
27	9
27	
	49

3)147	20
60	
87	20
60	
27	9
27	
	49

3)147	40
120	
27	9
27	
	49

147 ÷ 3 = ▢

C 727 ÷ 9 = ▢

9)727	20
180	
547	40
360	
187	20
180	
7	80

9)727	30
270	
457	40
360	
97	10
90	
7	80

9)727	50
450	
277	30
270	
7	80

9)727	80
720	
7	

727 ÷ 9 = ▢ and ▢ remainder

D 416 ÷ 6 = ▢

6)416	10
60	
356	20
120	
236	30
180	
56	9
54	
2	69

6)416	20
120	
296	20
120	
176	20
120	
56	9
54	
2	69

6)416	30
180	
236	30
180	
56	9
54	
2	69

6)416	60
360	
56	9
54	
2	69

416 ÷ 6 = ▢ and ▢ remainder

do

A The fourth graders had 90 beans to plant. They wanted to put 6 beans in each box. How many boxes did they need?
90 ÷ 6 = ▢

B The fourth graders have collected 56 pictures for their flower scrapbook. If they paste 4 pictures on a page, how many pages will they use?
56 ÷ 4 = ▢

C 110 ÷ 8 = ▢
D 91 ÷ 7 = ▢
E 119 ÷ 2 = ▢
F 160 ÷ 3 = ▢
G 173 ÷ 5 = ▢
H 400 ÷ 5 = ▢
I 574 ÷ 7 = ▢
J 83 ÷ 6 = ▢
K 231 ÷ 4 = ▢
L 70 ÷ 2 = ▢

M 403 ÷ 6 = ▢
N 85 ÷ 4 = ▢
O 135 ÷ 9 = ▢
P 664 ÷ 8 = ▢
Q 768 ÷ 8 = ▢
R 96 ÷ 2 = ▢
S 840 ÷ 9 = ▢
T 218 ÷ 5 = ▢
U 300 ÷ 6 = ▢
V 79 ÷ 4 = ▢

A 84 ÷ 7 = ▢
B 98 ÷ 4 = ▢
C 302 ÷ 4 = ▢
D 184 ÷ 8 = ▢
E 454 ÷ 6 = ▢
F 215 ÷ 3 = ▢
G 470 ÷ 5 = ▢
H 68 ÷ 2 = ▢
I 500 ÷ 7 = ▢
J 108 ÷ 3 = ▢

K 76 ÷ 2 = ▢
L 100 ÷ 6 = ▢
M 330 ÷ 5 = ▢
N 129 ÷ 9 = ▢
O 420 ÷ 7 = ▢
P 356 ÷ 4 = ▢
Q 571 ÷ 8 = ▢
R 94 ÷ 9 = ▢
S 200 ÷ 3 = ▢
T 357 ÷ 7 = ▢

Now you should be able to divide when the answer has two figures.

Thinking straight

A 524 ÷ 9 = ▢

```
9)524 | 60
 540
```

← When David wrote 540, he could not subtract. He had to erase and use a number smaller than 60 in the answer.

B 524 ÷ 9 = ▢

```
9)524 | 40
 360
 164  | 20
 180
```

← Jim worked his example this way. What is wrong with using 20? What number might Jim try instead of 20?

Find what is wrong with the work in the division examples below. Then work Examples C to G yourself.

C
```
6)460 | 40
 240
 220  | 40
 240
```

D
```
4)193 | 20
  80
  113 | 30
  120
```

E
```
7)625 | 90
 630
```

F
```
5)392 | 80
 400
```

G
```
8)620 | 50
 400
 220  | 30
 240
```

A 194 ÷ 3 = ▢

```
3)194 | 60
 180
```

← 19 tens ÷ 3 = about 6 tens. Try 60 in the answer.

B 301 ÷ 7 = ▢

```
7)301 | 40
 280
```

← 30 tens ÷ 7 = about 4 tens. Try 40 in the answer.

C 362 ÷ 5 = ▢

```
5)362 | 70
```

← 36 tens ÷ 5 = about ▢ tens

D 299 ÷ 6 = ▢

```
6)299 | 40
```

← ▢ tens ÷ ▢ = about ▢ tens

A 93 ÷ 2 = ▢	**F** 723 ÷ 9 = ▢	**A** 320 ÷ 4 = ▢	**F** 115 ÷ 2 = ▢
B 188 ÷ 6 = ▢	**G** 576 ÷ 8 = ▢	**B** 195 ÷ 6 = ▢	**G** 330 ÷ 5 = ▢
C 504 ÷ 8 = ▢	**H** 76 ÷ 3 = ▢	**C** 828 ÷ 9 = ▢	**H** 220 ÷ 3 = ▢
D 216 ÷ 4 = ▢	**I** 405 ÷ 5 = ▢	**D** 602 ÷ 7 = ▢	**I** 485 ÷ 6 = ▢
E 97 ÷ 7 = ▢	**J** 138 ÷ 9 = ▢	**E** 87 ÷ 2 = ▢	**J** 300 ÷ 8 = ▢

Using arithmetic

A Forty-four children were having a hot dog roast at the picnic grounds. On the way to the picnic, 4 children rode in each car. How many cars were needed for the children who went to the picnic?

B Nine mothers and 3 teachers went to the picnic, too. How many mothers and teachers were at the picnic?

C How many people were there in all at the picnic?

D Carol's mother brought 160 hot dogs to the picnic. The hot dogs were in packages of 8. How many packages did she bring?

E Jim's mother brought 150 hot dog buns. They were in packages of 6. How many packages of buns did she bring?

F Each package of hot dog buns cost 18¢. How much did all the packages of buns cost?

G How many more hot dogs than hot dog buns did the mothers buy?

H Ann's mother promised to make 36 cupcakes for the picnic. She told Ann the morning before the picnic that she had made 24 cupcakes. How many more did she have to make?

I Ann frosted 14 of the 36 cupcakes. Her mother frosted the rest. How many cupcakes did her mother frost?

J Tom's mother promised to make some cupcakes, too. After she had made 12 chocolate cupcakes, she said, "Now I have made 30 cupcakes." How many did she make before she made the 12 chocolate cupcakes?

K Peggy's mother paid $.43 apiece for 4 packages of marshmallows. How much did all the marshmallows cost?

L Don's mother brought 7 gallons of lemonade to the picnic. How many pints of lemonade was this?

M Mrs. White brought 7 packages of paper cups. There were 12 cups in each package. How many cups were there in the 7 packages?

N At the picnic, the children needed about 30 sticks for roasting hot dogs and about 45 more sticks for roasting marshmallows. About how many sticks in all did they need?

O Five children went to find sticks for the hot dogs and marshmallows. If the children were to share the work equally, about how many sticks would each child need to find?

P 15 children began to roast hot dogs on sticks. Each child had 1 stick. They could roast 2 hot dogs on each stick. How many hot dogs could they all roast at one time?

Q How many more hot dogs had to be roasted so that everyone at the picnic could have 1 hot dog?

THINK Problem C tells you how many people were at the picnic. What does Problem P tell you?

R Ann said, "I burned 4 marshmallows and had to throw them away." Jim said that he burned 8. Jim burned how many times as many as Ann?

S "I roasted 24 marshmallows," said Sue, "but we were able to eat only 15 of them. I burned the rest." Sue burned how many marshmallows?

T David gave 14 of the marshmallows he roasted to his friends. He kept 6 for himself. How many marshmallows had David roasted?

U Four children poured 56 cups of lemonade. If each child poured the same number of cups of lemonade, how many cups did each child pour?

V Mrs. Bell said, "We brought 120 cupcakes to our picnic. There are only 8 cupcakes left. We surely ate a lot of cupcakes." How many cupcakes were eaten at the picnic?

W After the picnic, 25 of the children helped pick up papers and put out the fire. The rest of the children helped carry things to the cars. How many children helped carry things to the cars?

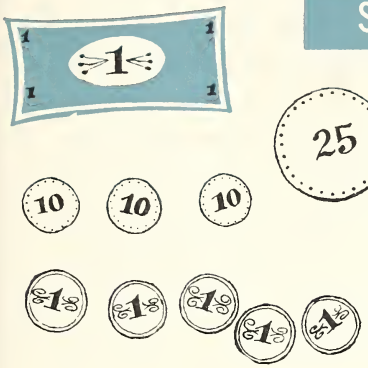
Keeping skillful

A $75 \div 2 = \square$
B $106 \div 4 = \square$
C $392 \div 7 = \square$
D $403 \div 5 = \square$
E $224 \div 9 = \square$
F $67 \div 3 = \square$
G $538 \div 6 = \square$
H $700 \div 8 = \square$
I $362 \div 9 = \square$
J $631 \div 7 = \square$

A $245 \div \square = 5$
B $87 \div \square = 3$
C $819 \div \square = 9$
D $595 \div \square = 7$
E $96 \div \square = 6$
F $132 \div \square = 4$
G $544 \div \square = 8$
H $60 \div \square = 2$
I $510 \div \square = 6$
J $272 \div \square = 4$

A $4316 - 2709 = \square$
B $8 \times 73 = \square$
C $641 + 238 + 390 = \square$
D $4 \times 216 = \square$
E $207 \div 3 = \square$
F $83 + 159 + 367 = \square$
G $48 \times 5 = \square$
H $600 - 258 = \square$
I $300 \div 5 = \square$
J $721 \times 7 = \square$

Exploring problems



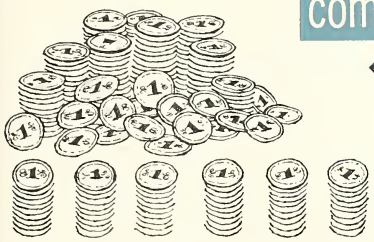
see

A Nancy has $1.60 to buy apples for a party. How many apples at $.06 each can she buy? How much money will she have left over?

$\$1.60 \div \$.06 = \square$

Number of apples she can buy

You must find this number.

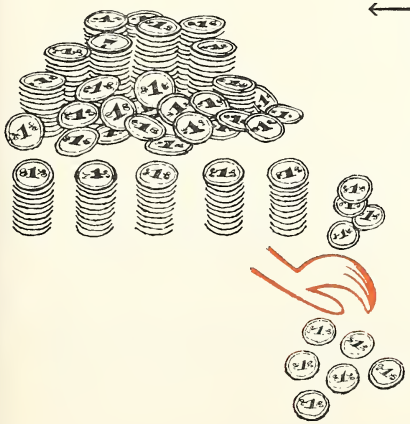


compute

Think of the money in pennies.

B 160 ← Think of $1.60 as 160.

Find how many groups of 6 pennies there are in 160 pennies.



C

$$\begin{array}{r|l} 6\overline{)160} & 20 \\ 120 & \\ \hline 40 & 6 \\ 36 & \\ \hline 4 & 26 \end{array}$$

Nancy can buy 26 apples.

She will have 4¢, or $.04, left over.

see

A

Six boys collected some old magazines and sold them for $1.60. Then they shared the money equally. Each boy's share was how much? How much money was left over?

$\$1.60 \div \square = 6$

Number of boys

You must find this amount of money.

compute

B

Think of the money in pennies.

160 ← Think of $1.60 as 160.

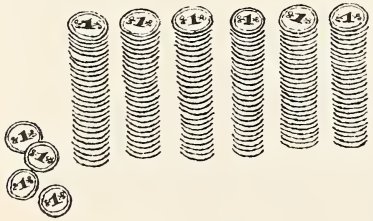
C

Each time the boys take 1 penny apiece, a group of 6 pennies will be used.

$$\begin{array}{r|l} 6\overline{)160} & 20 \\ 120 & \\ \hline 40 & 6 \\ 36 & \\ \hline 4 & 26 \end{array}$$

Each boy's share was 26¢, or $.26.

The boys would have 4¢ left over.



D

A Three boys have $1 to share equally. What is the largest amount of money that each boy can have? Will any money be left over? If so, how much?

THINK When you divide, the answer will be the amount of money each boy can have. The remainder will be the money left over.

$1.00 ÷ ▒ = 3 Divide 100 by 3.

B One week Sue earned $1.05 by helping her mother wash dishes and cook. She earned the same amount each day. How much did she earn each day?

$1.05 ÷ ▒ = 7 Divide 105 by 7.

C Tony wants to buy some tablets of colored paper. The tablets cost $.08 apiece. How many tablets can he buy with $1? Will he have any money left? If so, how much?

THINK When you divide, the answer will be the number of tablets, and the remainder will be the amount of money left.

$1.00 ÷ $.08 = ▒ Divide 100 by 8.

D How many 5-cent notebooks can Tony buy with $.60?

E Five boys are buying a book that costs $2.25. They are sharing the cost equally. How much should each boy pay?

F Jane wants to buy some picture postcards. She has $.44 to spend. The cards cost $.03 each. How many of these cards can she buy? Will she have any money left over? If so, how much?

G Jim and 2 friends collected old bottles and took them to the store. When Jim's mother asked how many bottles the boys had collected, Jim said, "The clerk gave us 2¢ apiece for our bottles, or 66¢ in all." They had collected how many bottles?

H The 3 boys shared the 66¢ equally. How much money did each boy get?

I Carol is buying some combs to put in Junior Red Cross boxes at school. She can get the combs for $.09 each. She has $1.20 to spend. How many combs can she buy? Will she have any money left over? If so, how much?

J Four girls earned $1.40 by taking some smaller children to a wading pool. They shared the money equally. How much was each girl's share?

K Mary has $3 to spend for 4 presents. She wants to spend the same amount for each present. How much can she spend for each present?

Now you should be able to divide amounts of money.

Keeping skillful

The best way to check your work in division is to divide again. But here is another way to check the answer to a division example.

A

$$\begin{array}{r|l} 8\overline{)123} & 10 \\ 80 & \\ \hline 43 & 5 \\ 40 & \\ \hline 3 & 15 \end{array}$$

B

15 ← Answer
8 ← Divisor
120 ← Multiply 15 by 8.
3 ← Remainder
123 ← Add the remainder to 120. You should get the number you divided.

C $428 \div 9 = 46$ and 4 remainder

46 ← This number is the ~~~.
9 ← This number is the ~~~.
414 ← How do you get this number?
4 ← What do you do with 4?
418 ← What should you do now?

Some of the answers for Examples A to H are not correct. Use the new way to check the answers. If an answer is wrong, find the correct answer.

- **A** $74 \div 3 = 24$ and 1 remainder
- **B** $123 \div 5 = 22$ and 3 remainder
- **C** $616 \div 7 = 88$
- **D** $104 \div 3 = 34$
- **E** $359 \div 6 = 58$ and 1 remainder
- **F** $134 \div 2 = 62$
- **G** $749 \div 8 = 93$ and 5 remainder
- **H** $675 \div 9 = 73$ and 8 remainder

The best way to check your work in addition and multiplication is to do the work again. In multiplication, you can multiply by the other number.

How do you check subtraction?

8463
5794 ← Add these numbers.
2669 ← Is the answer correct? How do you know?

Find the answers. Check your work.

- **A** $6 \times 329 =$ ▒
- **B** $42 \times 84 =$ ▒
- **C** $261 + 445 + 708 =$ ▒
- **D** $5030 - 4750 =$ ▒
- **E** $216 \div 5 =$ ▒
- **F** $9001 - 4632 =$ ▒
- **G** $524 \div 9 =$ ▒

Using arithmetic

A Twenty-nine children helped with a neighborhood art fair. Fifteen of them were boys. How many girls helped with the art fair?

B David and Mary made 42 name cards, one for each person who sold things at the fair. David made 16 cards, and Mary made the rest. How many name cards did Mary make?

C Mary made how many more name cards than David?

D The art fair was on the school playground. Some of the people who had pictures to sell put their pictures on the fence. Each person could use 8 feet of fence. The fence was 104 feet long. How many people could put their pictures on the fence?

E Each person who came to the fair gave 25¢ for the neighborhood club. 664 people came to the fair. How much in all did they give for the club?

F The neighborhood club needed $200 for its work. After the art fair, the neighborhood club still needed how much money?

G Ann sold balloons at the art fair. She sold 8 white balloons and 32 red ones. She sold how many times as many red balloons as white ones?

H How many balloons in all did Ann sell?

I The balloons sold for 15¢ each. How much money should Ann have collected for the balloons she sold?

J Mary's father bought two pictures at the fair. He paid $7.50 for one and $16 for the other. How much less did he pay for the first picture than for the second picture?

K The three Brown children bought a plate for their mother and shared the cost equally. The plate cost $2.25. How much was each child's share?

L Ellen had a lemonade stand. When she started, she had some money for making change. She sold $12.60 worth of lemonade. When she counted her money at the end of the day, she had $18.10 in all. How much money did she have for making change?

M Ellen said that she used 130 paper cups for the lemonade and still had 24 paper cups left. How many cups did she have to begin with?

N At the end of the day, 8 of the 29 children who helped with the fair were still there. The rest had gone home. How many children had gone home?

Learning how

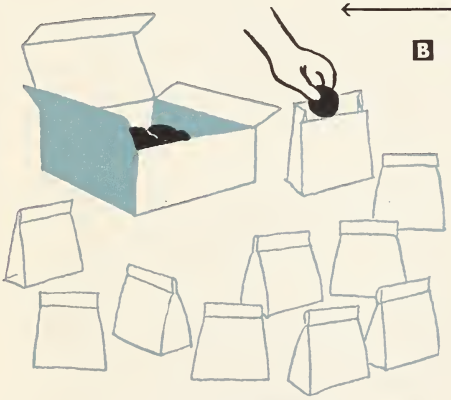
This lesson shows how to divide by a number that has two figures.

see

A

Carol and her mother have made 188 cookies for the Brownie Food Sale. They are putting 12 cookies into each bag. How many bags of 12 cookies will they have? How many cookies will they have left over?

$188 \div 12 = \square$ ← You must find this number.



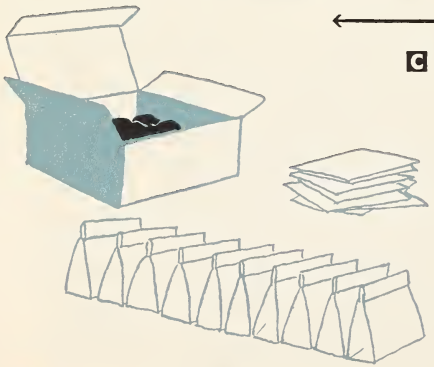
B

← Start by filling 10 bags of cookies. For 10 bags, you will use 120 cookies.

$$\begin{array}{r|l} 12\overline{)188} & 10 \\ \underline{120} & \\ & \end{array}$$

← Start with 10 bags of 12 cookies.

← $10 \times 12 = 120$. Write 120 here so that you can subtract to find how many cookies are left.

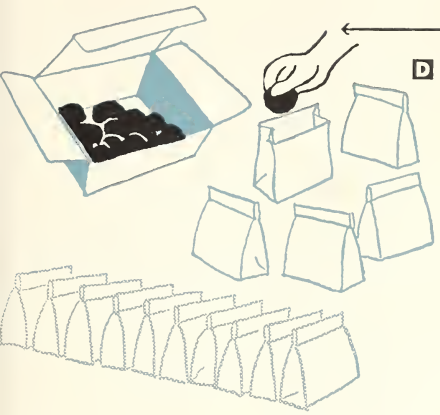


C

← There are some cookies left to be put into bags.

$$\begin{array}{r|l} 12\overline{)188} & 10 \\ \underline{120} & \\ 68 & \end{array}$$

← There are 68 cookies left.



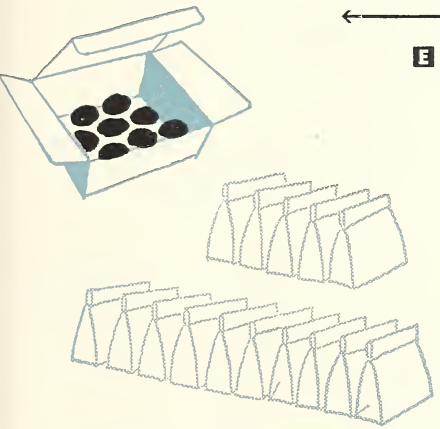
D

Next try 5 bags of cookies. For 5 bags you will use 60 cookies.

$$\begin{array}{r|l} 12\overline{)188} & 10 \\ 120 & \\ \hline 68 & 5 \\ 60 & \\ \hline \end{array}$$

5 ← Try 5 more bags.

60 ← $5 \times 12 = 60$. Write 60 here so that you can subtract.

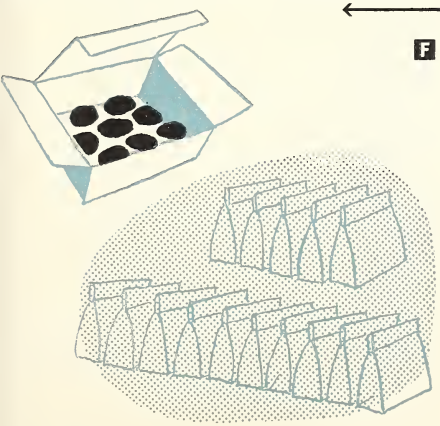


E

There are only 8 cookies left. 8 cookies are not enough for another full bag.

$$\begin{array}{r|l} 12\overline{)188} & 10 \\ 120 & \\ \hline 68 & 5 \\ 60 & \\ \hline 8 & \end{array}$$

8 ← There is a remainder of 8.



F

There are 15 full bags and 8 cookies left.

$$\begin{array}{r|l} 12\overline{)188} & 10 \\ 120 & \\ \hline 68 & 5 \\ 60 & \\ \hline 8 & 15 \end{array}$$

10 and 5 → Add 10 and 5.

15 ← There are 15 full bags of cookies.

8 ← 8 cookies are left over.

$188 \div 12 = 15$ and 8 remainder

think The Brownies are filling boxes with candy. They have 564 pieces of candy. If they put 25 pieces in each box, how many boxes can they fill? Will any candy be left over?

$564 \div 25 = \square$ ← You must find this number.

A Start by filling 10 boxes.
For 10 boxes you will use $10 \times \square$, or $\square$ pieces of candy.

$$\begin{array}{r|l} 25\overline{)564} & 10 \\ 250 & \end{array}$$

First try $\square$ twenty-fives.

← $10 \times \square = 250$. Why do you write 250 here?

B How many pieces of candy are left to be put in boxes of 25?

$$\begin{array}{r|l} 25\overline{)564} & 10 \\ 250 & \\ \hline 314 & \end{array}$$

How do you get 314? What does the 314 show?

C How do you know that you can fill 10 more boxes? You will use $\square \times 25$, or $\square$ more pieces of candy.

$$\begin{array}{r|l} 25\overline{)564} & 10 \\ 250 & \\ \hline 314 & 10 \\ 250 & \\ \hline 250 & \end{array}$$

Now try $\square$ more twenty-fives.

← How do you get this 250?

D Are there any more pieces of candy left to be put in boxes?

$$\begin{array}{r|l} 25\overline{)564} & 10 \\ 250 & \\ \hline 314 & 10 \\ 250 & \\ \hline 64 & \end{array}$$

← How do you get 64? What does it show?

E How do you know that you can fill 2 more boxes? You will use $2 \times \square$, or $\square$ more pieces of candy.

$$\begin{array}{r|l} 25\overline{)564} & 10 \\ 250 & \\ \hline 314 & 10 \\ 250 & \\ \hline 64 & 2 \\ 50 & \end{array}$$

Try $\square$ more twenty-fives.

← How do you get 50? What does it show?

F Are there enough pieces of candy left to make another box of 25?

```
25)564 | 10
   250
   314 | 10
   250
    64 |  2
    50
    14
```

There is a remainder of ▒.

G How many boxes of 25 pieces will there be? How many pieces will be left?

```
25)564 | 10
   250
   314 | 10
   250
    64 |  2
    50
    14 | 22
```

What do you do now?

There will be ▒ boxes of candy.

▒ pieces will be left.

564 ÷ 25 = ▒ and ▒ remainder

---

try

A 2585 ÷ 55 = ▒

```
55)2585 | 10
   550
  2035 | 20
  1100
   935 | 10
   550
   385 |  5
   275
   110 |  2
   110
    47
```

```
55)2585 | 20
  1100
  1485 | 20
  1100
   385 |  5
   275
   110 |  2
   110
    47
```

```
55)2585 | 30
  1650
   935 | 10
   550
   385 |  6
   330
    55 |  1
    55
    47
```

```
55)2585 | 40
  2200
   385 |  7
   385
    47
```

2585 ÷ 55 = ▒

Now turn the page.

B $338 \div 37 =$ ▒

$$\begin{array}{r|l} 37\overline{)338} & 5 \\ 185 & \\ \hline 153 & 4 \\ 148 & \\ \hline 5 & 9 \end{array} \qquad \begin{array}{r|l} 37\overline{)338} & 8 \\ 296 & \\ \hline 42 & 1 \\ 37 & \\ \hline 5 & 9 \end{array} \qquad \begin{array}{r|l} 37\overline{)338} & 6 \\ 222 & \\ \hline 116 & 3 \\ 111 & \\ \hline 5 & 9 \end{array} \qquad \begin{array}{r|l} 37\overline{)338} & 9 \\ 333 & \\ \hline 5 & \end{array}$$

$338 \div 37 =$ ▒ and ▒ remainder

C $2315 \div 46 =$ ▒

$$\begin{array}{r|l} 46\overline{)2315} & 10 \\ 460 & \\ \hline 1855 & 20 \\ 920 & \\ \hline 935 & 20 \\ 920 & \\ \hline 15 & 50 \end{array} \qquad \begin{array}{r|l} 46\overline{)2315} & 20 \\ 920 & \\ \hline 1395 & 30 \\ 1380 & \\ \hline 15 & 50 \end{array} \qquad \begin{array}{r|l} 46\overline{)2315} & 40 \\ 1840 & \\ \hline 475 & 10 \\ 460 & \\ \hline 15 & 50 \end{array} \qquad \begin{array}{r|l} 46\overline{)2315} & 50 \\ 2300 & \\ \hline 15 & \end{array}$$

$2315 \div 46 =$ ▒ and ▒ remainder

D $650 \div 78 =$ ▒

$$\begin{array}{r|l} 78\overline{)650} & 5 \\ 390 & \\ \hline 260 & 2 \\ 156 & \\ \hline 104 & 1 \\ 78 & \\ \hline 26 & 8 \end{array} \qquad \begin{array}{r|l} 78\overline{)650} & 6 \\ 468 & \\ \hline 182 & 2 \\ 156 & \\ \hline 26 & 8 \end{array} \qquad \begin{array}{r|l} 78\overline{)650} & 4 \\ 312 & \\ \hline 338 & 4 \\ 312 & \\ \hline 26 & 8 \end{array} \qquad \begin{array}{r|l} 78\overline{)650} & 8 \\ 624 & \\ \hline 26 & \end{array}$$

$650 \div 78 =$ ▒ and ▒ remainder

do

A Some Brownies worked a total of 420 min. at the food sale. Each girl worked for 30 min. How many girls worked at the sale?
$420 \div 30 = \square$

B Peggy said, "We worked 420 min. in all. I wonder how many hours we worked." How many hours had the girls worked?
$420 \div 60 = \square$

C $531 \div 40 = \square$
D $673 \div 34 = \square$
E $400 \div 26 = \square$
F $2175 \div 31 = \square$
G $107 \div 12 = \square$
H $859 \div 57 = \square$
I $1360 \div 73 = \square$
J $928 \div 35 = \square$

K $243 \div 68 = \square$
L $3795 \div 56 = \square$
M $468 \div 18 = \square$
N $3789 \div 42 = \square$
O $560 \div 80 = \square$
P $700 \div 64 = \square$
Q $887 \div 17 = \square$
R $4550 \div 90 = \square$

A $2639 \div 53 = \square$
B $300 \div 75 = \square$
C $173 \div 24 = \square$
D $641 \div 19 = \square$
E $1440 \div 36 = \square$
F $1342 \div 50 = \square$
G $209 \div 48 = \square$
H $7503 \div 87 = \square$

Now you should be able to divide by any number that has two figures.

Keeping skillful

A 4 hr. = ☐ min.
B 80 pt. = ☐ gal.
C 96 pt. = ☐ qt.
D 25 gal. = ☐ qt.
E 5 yd. = ☐ in.
F 8 min. = ☐ sec.
G 3 yr. = ☐ mo.
H 77 da. = ☐ wk.
I 15 gal. = ☐ pt.
J 72 ft. = ☐ yd.
K 21 wk. = ☐ da.
L 50 yd. = ☐ ft.
M 64 qt. = ☐ gal.
N 25 lb. = ☐ oz.
O 13 yd. = ☐ in.

A $82 + 14 + 56 = \square$
B $738 + 492 = \square$
C $\square + 641 = 900$
D $\square - 375 = 299$
E $217 + 205 + 364 = \square$
F $2565 - \square = 1878$
G $5330 + \square = 8900$
H $98 + 71 + 85 = \square$
I $5002 - 3746 = \square$
J $\square + 318 = 604$
K $320 + 500 + 467 = \square$
L $\square - 431 = 528$
M $7349 - 2680 = \square$
N $\square - 848 = 501$
O $1073 + \square = 2024$

A $249 \times 5 = \square$
B $72 \times 82 = \square$
C $6 \times 58 = \square$
D $9 \times 307 = \square$
E $36 \times 118 = \square$
F $8 \times 94 = \square$
G $253 \times 70 = \square$
H $55 \times 84 = \square$
I $19 \times 48 = \square$
J $602 \times 7 = \square$
K $31 \times 45 = \square$
L $90 \times 109 = \square$
M $66 \times 28 = \square$
N $4 \times 736 = \square$
O $217 \times 50 = \square$

Using arithmetic

A Jim, Carol, Sue, and Don spent 2 weeks on Mr. Block's farm in the summer. How many days did they spend on the farm?

B On the way to the farm, Jim counted 32 trucks, and Don counted 19 trucks. Don counted how many fewer trucks than Jim?

C At the farm Mr. Block showed some little chickens to the children. Mr. Block said that he had about 125 of them in each of 4 chicken houses. He had about how many little chickens?

D Mr. Block also showed the children his cows and sheep. He had 35 cows and 11 sheep. He had how many more cows than sheep?

E On the farm there was a pond about 18 yards long and about 9 yards wide. This pond was about how many times as long as it was wide?

F Mr. Block sold 18 pt. of honey one day and 25 pt. the next. He sold how many pints of honey on those 2 days?

G One day the children helped pick blueberries. They picked 24 boxes. Each of the 4 children picked the same number of boxes. How many boxes did each child pick?

H The children picked 11 boxes of blueberries in the morning and the others in the afternoon. How many boxes of blueberries did they pick in the afternoon?

I One morning Jim and Don caught some minnows in the pond. They caught 13 more in the afternoon. Then they had 20 minnows. How many minnows had Jim and Don caught in the morning?

J Jim caught 9 of the minnows, and Don caught the others. How many of the 20 minnows did Don catch?

K On Saturday morning Mr. Block had 39 baskets of peaches and sold 17 of them. How many baskets of peaches did he have then?

L Saturday afternoon Mr. Block sold some more peaches. Then he had only 6 baskets left. How many baskets did he sell Saturday afternoon?

M The children picked 144 peaches and put them into bags. They put 6 peaches into each bag. How many bags did they fill with peaches?

N Mr. Block paid the children $.05 for each bag of peaches they picked and filled. How much money did he give them for all the bags of peaches?

O The 4 children divided this money equally. Each child's share amounted to how much money?

P Another day the children picked some peaches in the morning. They ate 7 of them for lunch. Then 19 peaches were left. How many peaches had the children picked that morning?

Q Mrs. Block made butter one day. She said that she used 6 pints of cream. This amount of cream was equal to how many quarts?

R Sue helped Mrs. Block make 6 doz. cookies. How many cookies was this?

S The cookies filled 4 cooky sheets. Mrs. Block put the same number of cookies on each sheet. How many cookies did she put on each sheet?

T Mr. Block said that he spent 3 hr. each day milking his cows. How many hours would he spend in this way in a year?

U Mr. Block sold 240 gallons of milk in 3 days. He said that he had sold the same amount of milk each day. How many gallons of milk had he sold each day?

V Mr. Block said that his cows gave about 120 gallons of milk each day. About how many gallons of milk did his cows give in one week?

W By the time the children went home, they had earned $6.00 in all by helping on the farm. Each child had earned the same amount. How much money had each child earned?

Checking up

	Test 1	Test 2	Test 3	Test 4
A	$81 \div 3 =$ ▒	$645 \div 8 =$ ▒	$420 \div 5 =$ ▒	$629 \div 25 =$ ▒
B	$97 \div 8 =$ ▒	$212 \div 3 =$ ▒	$631 \div 7 =$ ▒	$823 \div 32 =$ ▒
C	$83 \div 4 =$ ▒	$481 \div 5 =$ ▒	$84 \div 6 =$ ▒	$160 \div 37 =$ ▒
D	$60 \div 5 =$ ▒	$468 \div 7 =$ ▒	$480 \div 8 =$ ▒	$720 \div 12 =$ ▒
E	$96 \div 7 =$ ▒	$270 \div 3 =$ ▒	$65 \div 3 =$ ▒	$1587 \div 46 =$ ▒
F	$76 \div 2 =$ ▒	$582 \div 6 =$ ▒	$261 \div 9 =$ ▒	$6873 \div 74 =$ ▒
G	$89 \div 6 =$ ▒	$315 \div 4 =$ ▒	$55 \div 5 =$ ▒	$3101 \div 89 =$ ▒
H	$91 \div 9 =$ ▒	$828 \div 9 =$ ▒	$72 \div 3 =$ ▒	$304 \div 58 =$ ▒
I	$43 \div 3 =$ ▒	$716 \div 8 =$ ▒	$650 \div 9 =$ ▒	$765 \div 18 =$ ▒
J	$64 \div 5 =$ ▒	$284 \div 7 =$ ▒	$318 \div 4 =$ ▒	$3871 \div 56 =$ ▒

Looking back This lesson is about fractions and what they mean.

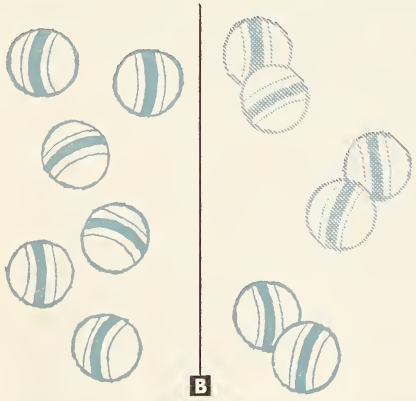
A

The 3 shows that the board has been cut into 3 equal parts.

$\frac{1}{3}$ ← The 1 shows that we are thinking of 1 of the equal parts.

one third

The numeral $\frac{1}{3}$ compares the part we are thinking of with the whole board.



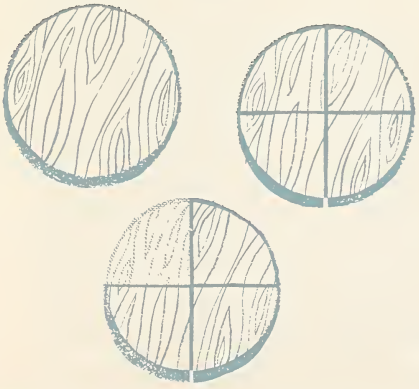
B

The 3 shows that the balls have been separated into 3 equal groups.

$\frac{1}{3}$ ← The 1 shows that we are thinking of 1 of the equal groups.

one third

Here the numeral $\frac{1}{3}$ compares the group of balls we are thinking of with all the balls.



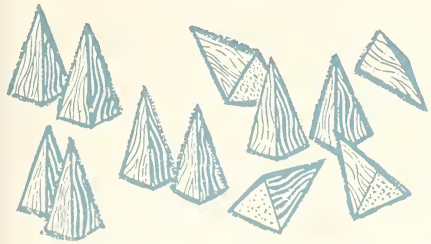
C

The 4 shows that the board has been cut into 4 equal parts.

$\frac{3}{4}$ ← The 3 shows that we are thinking of 3 of the equal parts.

three fourths

The numeral $\frac{3}{4}$ compares the part we are thinking of with the whole board.



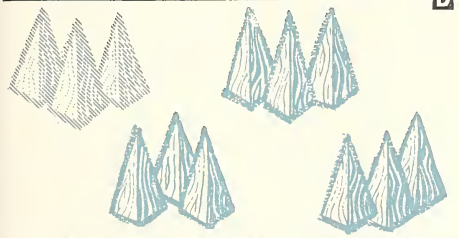
D

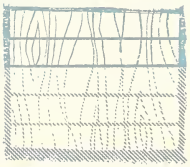
The 4 shows that the blocks have been separated into 4 equal groups.

$\frac{3}{4}$ ← The 3 shows that we are thinking of 3 of the equal groups.

three fourths

Here the numeral $\frac{3}{4}$ compares the blocks we are thinking of with all the blocks.





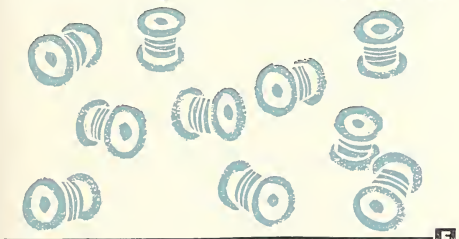
E

The 5 shows that the board has been cut into 5 equal parts.

$\frac{2}{5}$ ← The 2 shows that we are thinking of 2 of the equal parts.

two fifths

The numeral $\frac{2}{5}$ compares the part we are thinking of with the whole board.



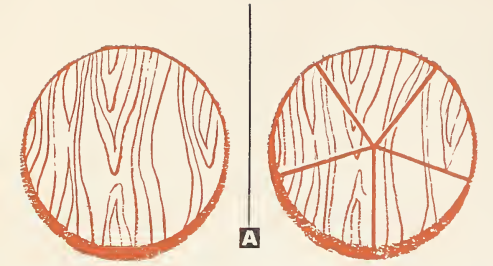
F

The 5 shows that the spools have been separated into 5 equal groups.

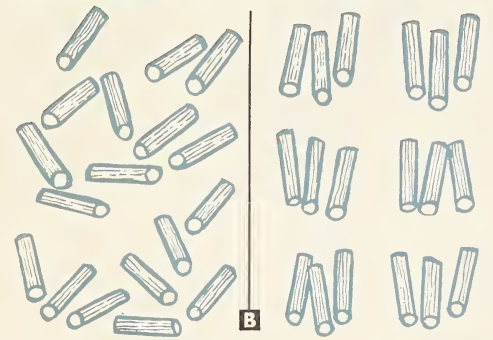
$\frac{2}{5}$ ← The 2 shows that we are thinking of 2 of the equal groups.

two fifths

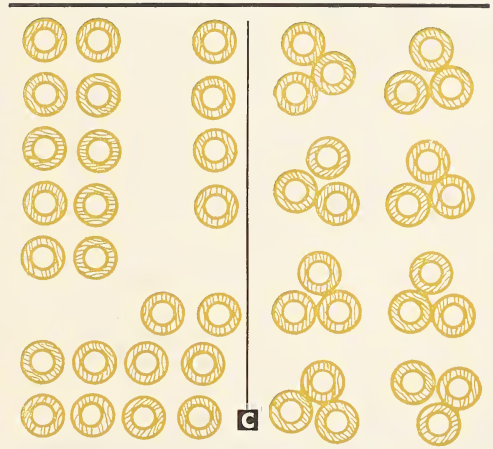
Here the numeral $\frac{2}{5}$ compares the spools we are thinking of with all the spools.



A The board in Picture A is cut into ▒ equal parts.
Each part is one fifth of the board.
Each part is $\frac{1}{5}$ of the board.
4 parts are ▒ fifths of the board.
4 parts are $\frac{▒}{5}$ of the board.



B The 18 sticks in Picture B are separated into ▒ equal groups.
They are separated into sixths.
Each group of 3 sticks is ▒ sixth, or $\frac{1}{6}$.
3 of these groups are ▒ sixths, or $\frac{▒}{6}$.
5 of these groups are ▒ sixths, or $\frac{▒}{6}$.



C The 24 rings in Picture C are separated into ▒ equal groups.
They are separated into eighths.
Each group of 3 rings is ▒ eighth, or $\frac{▒}{8}$.
5 groups of 3 rings are ▒ eighths, or $\frac{▒}{8}$.

D $\frac{7}{8}$ of the rings = ▒ groups of 3 rings

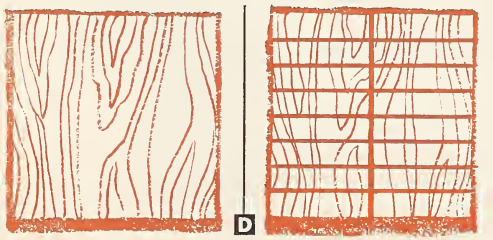
E The board in Picture D is cut into ▒ equal parts.
It is cut into ~~~.
Each part is $\frac{▒}{16}$ of the board.

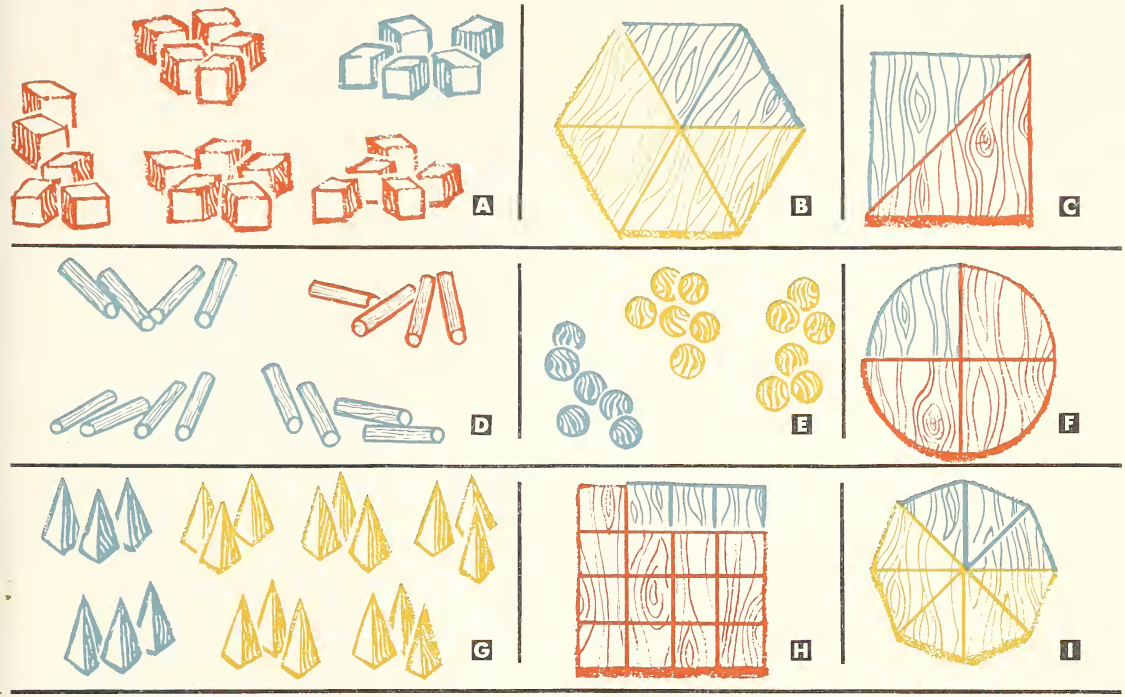
F 3 parts are $\frac{▒}{16}$ of the board.

G 6 parts are $\frac{▒}{16}$ of the board.

H $\frac{11}{16}$ of the board = ▒ parts

I Fractions are shown by numerals like $\frac{1}{2}$, $\frac{1}{5}$, $\frac{3}{4}$, and $\frac{9}{16}$. Whole numbers are shown by numerals like 7, 19, 126, and 2000. Write 5 fractions. Write 5 whole numbers.





A For each picture write the numeral that tells what fraction of the picture is blue.

B For each picture write the numeral that tells what fraction of the picture is not blue.

Read.

A	B	C	D	E	F	G	H	I
$\frac{3}{5}$	$\frac{12}{16}$	$\frac{1}{4}$	$\frac{4}{7}$	$\frac{5}{6}$	$\frac{1}{9}$	$\frac{4}{8}$	$\frac{2}{3}$	$\frac{1}{6}$

J	K	L	M	N	O	P	Q	R
$\frac{7}{8}$	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{2}{5}$	$\frac{3}{4}$	$\frac{2}{9}$	$\frac{9}{10}$	$\frac{5}{8}$	$\frac{7}{12}$

C Which is more, one half dozen balls or one third dozen balls?

D Which is less, one fifth of a stick, or one sixth of the same stick?

Write with numerals.

A two fourths
B one tenth
C one fifth
D five sixths
E two thirds
F one half
G five eighths
H four fifths
I three sevenths
J three eighths
K two sixths
L three fifths

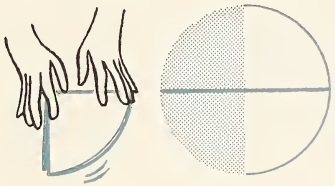
Now you know how to read and write numerals that stand for fractions of one whole thing. The whole thing may be an apple or a pound of sugar, or it may be a group of apples or many pounds of sugar.

Moving forward

In this lesson you will see that fractions can be written in different ways.

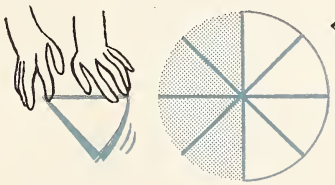
A

A round piece of paper is being folded into 2 equal parts.
Each part is what fraction of the paper?
There are ▒ halves in one.
$1 = \frac{2}{2}$



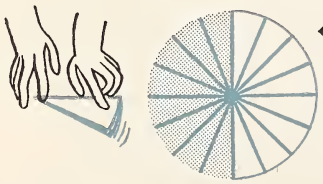
B

The paper is folded again.
Now it is folded into ▒ equal parts.
Each part is what fraction of the paper?
There are ▒ fourths in one.
How many fourths are there in each half?
$1 = \frac{4}{4}$ $\frac{1}{2} = \frac{2}{4}$



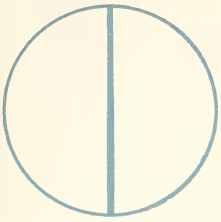
C

When the paper is folded again, there are ▒ equal parts.
How many eighths are there in one?
How many eighths are there in each half?
$1 = \frac{8}{8}$ $\frac{1}{2} = \frac{4}{8}$



D

The paper is folded once more.
Now there are ▒ equal parts.
How many sixteenths are there in one?
How many sixteenths are there in each half?
$1 = \frac{16}{16}$ $\frac{1}{2} = \frac{\square}{16}$

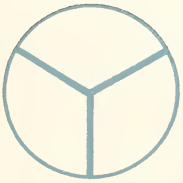


$1 = \frac{\square}{2}$ **A**

$1 = \frac{\square}{6}$ $\frac{1}{2} = \frac{\square}{6}$ **B**

$1 = \frac{\square}{12}$ $\frac{1}{2} = \frac{\square}{12}$ **C**

$\frac{1}{3} = \frac{\square}{12}$ **D**

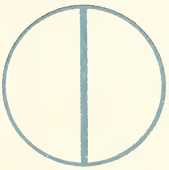


$1 = \frac{\square}{3}$ **E**

$1 = \frac{\square}{6}$ $\frac{1}{3} = \frac{\square}{6}$ **F**

$1 = \frac{\square}{12}$ $\frac{1}{3} = \frac{\square}{12}$ **G**

$\frac{1}{6} = \frac{\square}{12}$ **H**



$1 = \frac{\square}{2}$ **I**

$1 = \frac{\square}{10}$ $\frac{1}{2} = \frac{\square}{10}$ **J**

$1 = \frac{\square}{5}$ **K**

$1 = \frac{\square}{10}$ $\frac{1}{5} = \frac{\square}{10}$ **L**

$1 = \frac{\square}{3}$ **M**

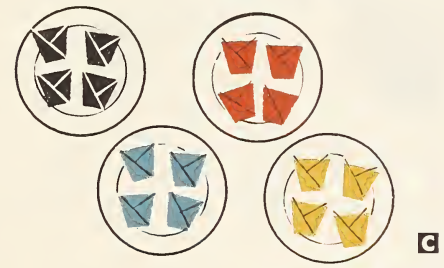
$1 = \frac{\square}{9}$ $\frac{1}{3} = \frac{\square}{9}$ **N**

$1 = \frac{\square}{4}$ **O**

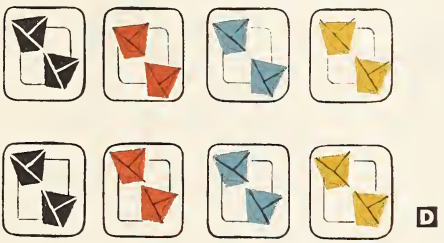
$1 = \frac{\square}{12}$ $\frac{1}{4} = \frac{\square}{12}$ **P**

A Here are some paper cups.
Think of them as one group.

B Now the cups have been separated into 2 equal groups.
Each group is $\frac{\square}{2}$ of all the cups.
$1 = \frac{\square}{2}$

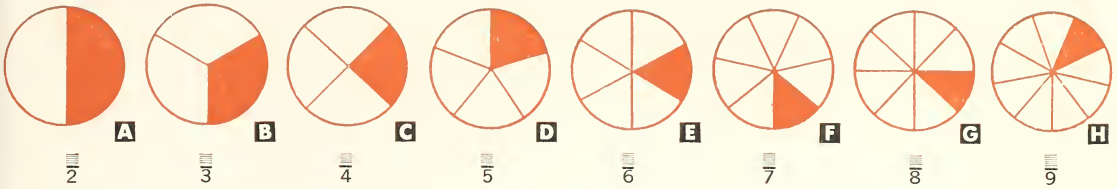


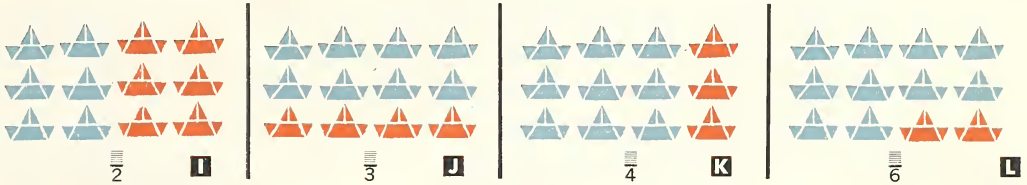
C Each box of cups has been separated again.
Each half has been separated into 2 equal groups.
Each new group is $\frac{\square}{4}$ of all the cups.
There are how many fourths in each half?
$1 = \frac{\square}{4}$ $\frac{1}{2} = \frac{\square}{4}$

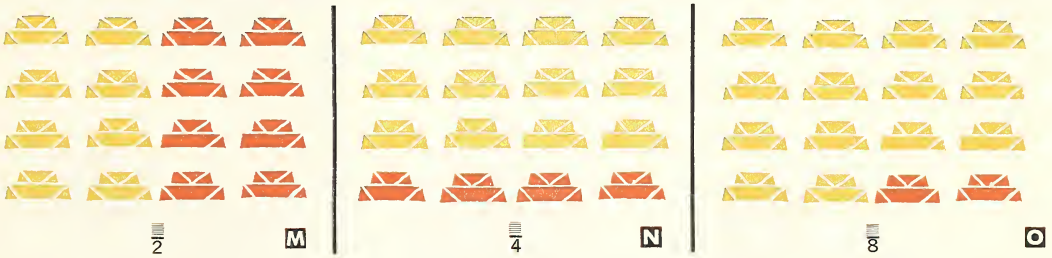


D Now each of the 4 groups of cups has been separated again.
Each fourth has been separated into 2 equal groups.
How many equal groups are there?
Each group is $\frac{\square}{8}$ of all the cups.
There are ▒ eighths in each half.
There are ▒ eighths in each fourth.
$1 = \frac{\square}{8}$ $\frac{1}{2} = \frac{\square}{8}$ $\frac{1}{4} = \frac{\square}{8}$

E Into how many parts has each small group in Picture E been separated now?
Each part is $\frac{\square}{16}$ of all the cups.
$1 = \frac{\square}{16}$ $\frac{1}{2} = \frac{\square}{16}$ $\frac{1}{4} = \frac{\square}{16}$ $\frac{1}{8} = \frac{\square}{16}$







A Which is larger, $\frac{1}{2}$ or $\frac{1}{3}$ of a circle?

B Which is fewer, $\frac{1}{8}$ or $\frac{1}{5}$ of a group of pictures?

C Which is smaller, $\frac{1}{3}$ or $\frac{1}{4}$ of a square?

D Which is more, $\frac{1}{6}$ or $\frac{1}{9}$ of a group of paper cups?

E Which is larger, $\frac{1}{4}$ or $\frac{1}{12}$ of a piece of paper?

F Which is more, $\frac{1}{6}$ or $\frac{1}{3}$ of a group of paper boats?

Write these fractions so that the smallest fraction is first, the second smallest one is next, the third smallest one is next, and so on.

A $\frac{1}{3}, \frac{1}{2}, \frac{1}{7}, \frac{1}{10}$

B $\frac{1}{4}, \frac{1}{9}, \frac{1}{6}, \frac{1}{8}$

C $\frac{1}{16}, \frac{1}{2}, \frac{1}{12}, \frac{1}{9}$

D $\frac{1}{10}, \frac{1}{7}, \frac{1}{4}, \frac{1}{16}$

E $\frac{1}{8}, \frac{1}{4}, \frac{1}{3}, \frac{1}{12}$

F $\frac{1}{4}, \frac{1}{3}, \frac{1}{10}, \frac{1}{16}$

G $\frac{1}{12}, \frac{1}{5}, \frac{1}{10}, \frac{1}{2}$

H $\frac{1}{2}, \frac{1}{7}, \frac{1}{4}, \frac{1}{6}$

I $\frac{1}{3}, \frac{1}{16}, \frac{1}{5}, \frac{1}{8}$

J $\frac{1}{9}, \frac{1}{12}, \frac{1}{4}, \frac{1}{16}$

K $\frac{1}{3}, \frac{1}{7}, \frac{1}{12}, \frac{1}{10}$

L $\frac{1}{15}, \frac{1}{6}, \frac{1}{4}, \frac{1}{12}$

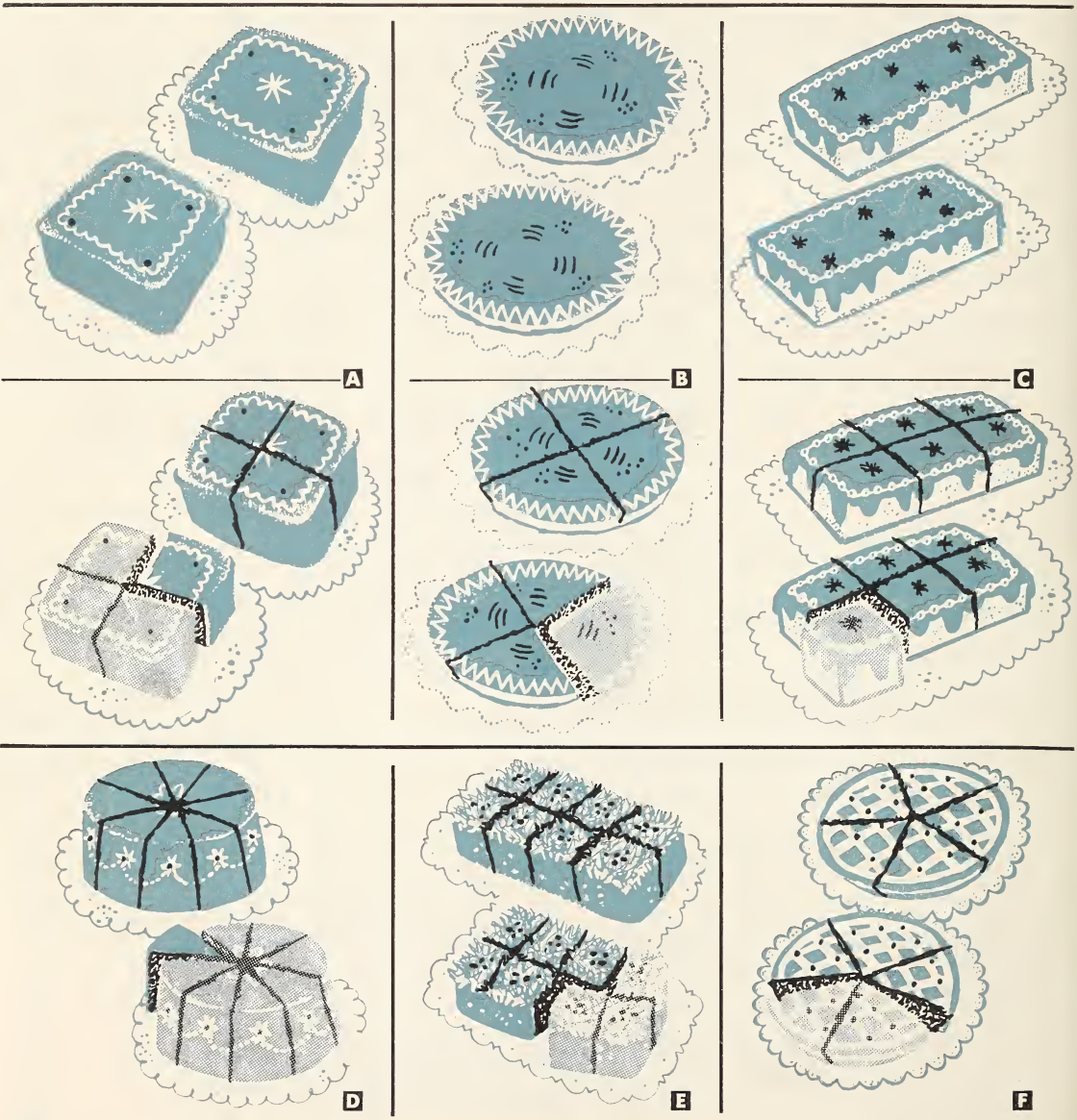
M $\frac{1}{8}, \frac{1}{4}, \frac{1}{10}, \frac{1}{3}$

N $\frac{1}{10}, \frac{1}{5}, \frac{1}{15}, \frac{1}{16}$

Now you see that fractions which stand for a part of one thing can be written in different ways.

Moving forward

Now you will learn about a new kind of numeral. This new numeral is used when we have whole things and also fractions of the same things.

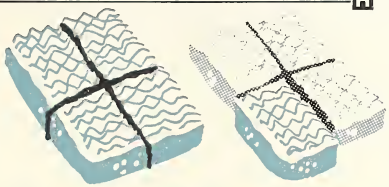


G

The 4 shows that each cake has been cut into 4 equal parts. → $\frac{5}{4}$ ← The 5 shows that we are thinking of 5 of the equal parts.

five fourths

H



This 1 shows we are thinking of 1 of the two equal cakes. → $1\frac{1}{4}$ ← This 1 shows that we are thinking of 1 of the 4 equal parts of one of the cakes.

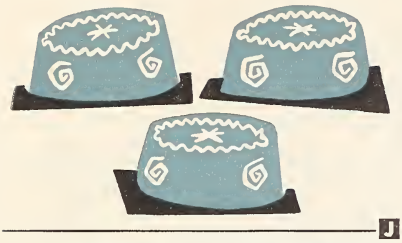
The 4 shows that the other cake has been cut into 4 equal parts. →

one and one fourth

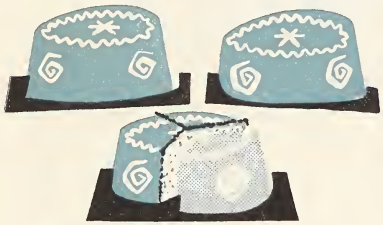
I

The 3 shows that each cake has been cut into 3 equal parts. → $\frac{8}{3}$ ← The 8 shows that we are thinking of 8 of the equal parts.

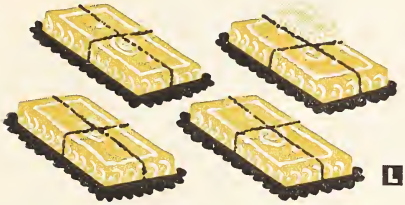
eight thirds



J



K



L

M

N

This 2 shows we are thinking of 2 of the three equal cakes.

The 3 shows that the other cake has been cut into 3 equal parts.

$2\frac{2}{3}$

This 2 shows we are thinking of 2 of the 3 equal parts of the third cake.

two and two thirds

A In Picture K we are thinking of 1 whole cake and what fraction of the other cake? We are thinking of 1 cake and $\frac{1}{\square}$ of the other cake. We are also thinking of $\frac{\square}{2}$ of the cakes.

$1\frac{1}{2} = \frac{\square}{2}$ $\quad \frac{3}{2} = 1\frac{\square}{2}$

B In Picture L we are thinking of 3 whole cakes and what fraction of the other cake? We are thinking of 3 whole cakes and $\frac{\square}{4}$ of a cake. We are also thinking of $\frac{15}{\square}$ of the cakes.

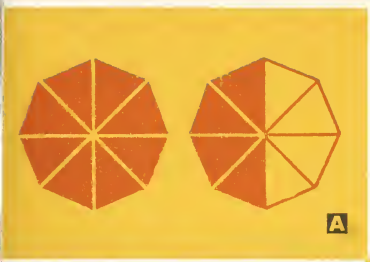
$3\frac{3}{4} = \frac{\square}{4}$ $\quad \frac{15}{4} = \square\frac{3}{4}$

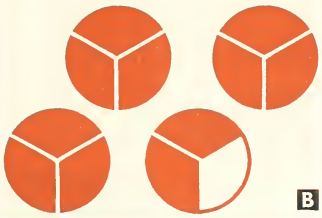
C In Picture M we are thinking of 2 cakes and $\frac{3}{\square}$ of another cake. We are also thinking of $\frac{\square}{6}$ of the cakes.

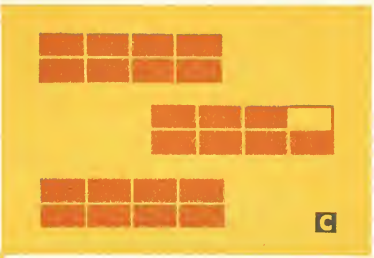
$2\frac{3}{6} = \frac{15}{\square}$ $\quad \frac{15}{6} = 2\frac{\square}{6}$

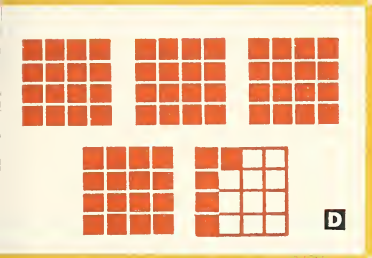
D In Picture N we are thinking of $\square$ cake and $\frac{5}{8}$ of the other cake. We are also thinking of $\frac{13}{\square}$ of the cakes.

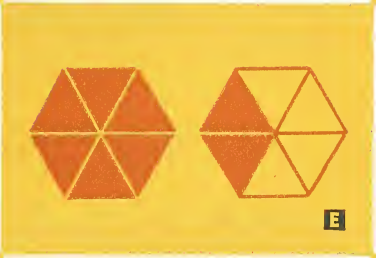
$1\frac{5}{8} = \frac{\square}{8}$ $\quad \frac{13}{8} = \square\frac{5}{8}$

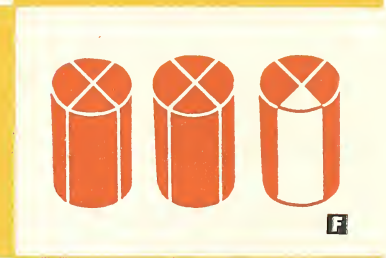


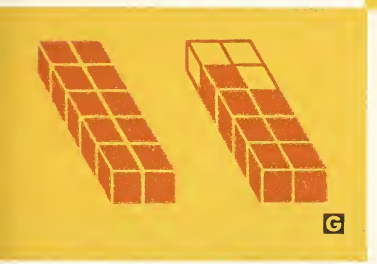


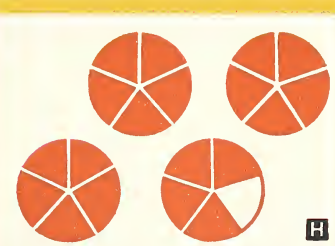


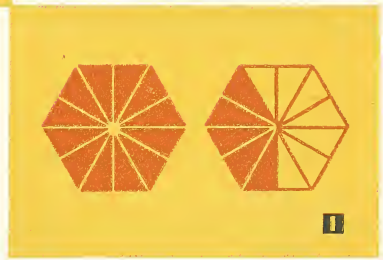












For each picture above, write two numerals. For Picture A you can write $1\frac{4}{8}$ and $\frac{12}{8}$.

Write with numerals.

- **A** three fifths
- **B** one and one half
- **C** thirteen eighths
- **D** three and eleven sixteenths
- **E** four and seven tenths
- **F** fifteen fourths
- **G** seven and eleven twelfths

Read.

A	B	C	D	E	F
$2\frac{3}{4}$	$\frac{17}{10}$	$\frac{14}{5}$	$3\frac{1}{16}$	$3\frac{7}{12}$	$\frac{19}{8}$

G	H	I	J	K	L
$\frac{15}{7}$	$1\frac{7}{16}$	$1\frac{1}{2}$	$\frac{13}{5}$	$3\frac{3}{12}$	$\frac{14}{9}$

M	N	O	P	Q	R
$5\frac{1}{6}$	$1\frac{9}{10}$	$\frac{21}{16}$	$1\frac{11}{16}$	$2\frac{3}{5}$	$\frac{18}{12}$

Now you should understand the numerals that mean whole things and also fractions of the same things.

Moving forward

Now you will learn how fractions are used when you measure with a ruler.

A

1 in.

B

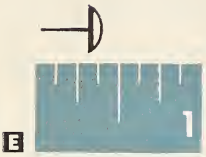
1 in. = $\frac{2}{2}$ in.

C

1 in. = $\frac{4}{4}$ in. $\frac{1}{2}$ in. = $\frac{2}{4}$ in.

D

1 in. = $\frac{8}{8}$ in. $\frac{1}{2}$ in. = $\frac{4}{8}$ in. $\frac{1}{4}$ in. = $\frac{2}{8}$ in.

E 

F

G

H

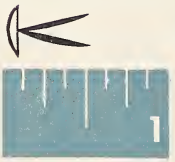
I

J

K

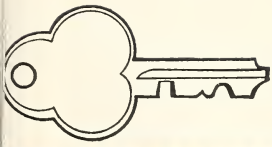
L

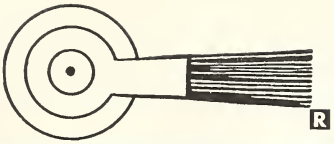
M

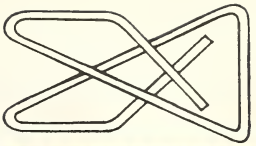
N 

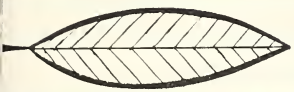
O

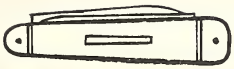
P

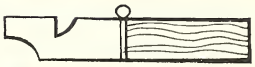


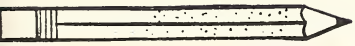


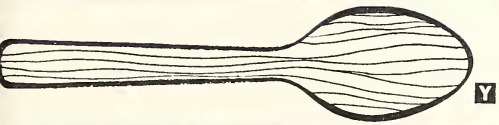


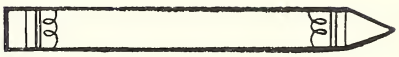






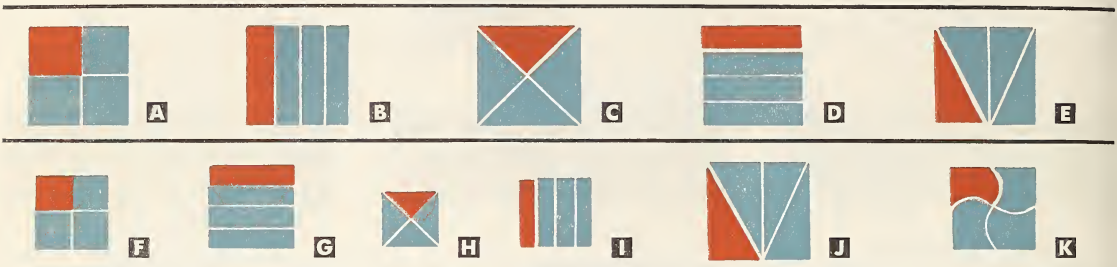






Now you should be able to use fractions when you measure with a ruler.

Thinking straight



A In the top row, the pieces of paper are all the same shape and size. Each red part is one fourth of the piece. Are all the fourths the same shape? Are all the fourths the same size?

B In the second row of pictures, are all the pieces of paper the same shape? Are they all the same size?

C In the second row, each red part is also one fourth of each piece of paper. Are all the fourths the same shape? Are they all the same size?

D Can you use the same numeral to tell what part of each piece of paper in Picture L below is yellow? If so, what numeral would you use?

E Are the two yellow parts in Picture L equal in size? How do you know?

F Look at each set of pictures below. Are you sure that you can use the same numeral to tell what part of each piece of paper is yellow? Why?

G Look at each set of pictures below again. Are you sure that the yellow parts of each piece of paper are the same size? How do you know?

H Are all one fourths of the same thing the same size?

I Are all one fourths of different things the same size?

J Are all one thirds of the same thing the same size?

Using arithmetic

A One weekend Bill and Ellen Young helped around the house. Mr. Young paid each of them $.75. How much did the 2 children earn?

B Ellen helped her mother by taking her baby sister for a ride in her buggy. As she walked with the baby, she counted 32 cars and 18 trucks going by. She counted how many more cars than trucks?

C Bill helped his father wash windows. There were 6 windows on one side of the house, 4 on the second side, 5 on the third side, and 3 on the fourth side. There were how many windows in all to wash?

D It took Bill's father 50 minutes to wash the windows on three sides of the house. It took Bill 35 minutes to wash them on one side. Bill spent how much less time washing windows than his father did?

E Ellen and Bill went to the pet store to buy a collar and a dish for their dog. The collar cost $1.85. The dish cost 69¢. How much did these two things cost?

F They also bought 3 rubber bones for their dog. The 3 bones cost $.87 in all. How much did each bone cost?

G Ellen washed dishes for her mother. She washed 12 plates and 4 cups. She washed how many times as many plates as cups?

H Mrs. Young baked 24 cupcakes. 16 of the cupcakes she baked were chocolate, and the rest were plain white cupcakes. How many plain white cupcakes did she bake?

I Ellen helped frost the 24 cupcakes. After she had frosted some of them, there were 13 left to frost. How many had she frosted?

J Bill took shoes to the shoemaker for his father. It took him 15 min. to walk to the shoemaker's and 18 min. to walk back. How long in all did it take him to make the trip?

K It took Ellen 36 minutes to make 4 beds for her mother. She spent about the same amount of time making each bed. About how long did it take her to make one bed?

L Bill and his father raked leaves in the yard. Bill picked up some baskets of leaves in the morning. In the afternoon he picked up 9 more baskets. In all he picked up 16 baskets of leaves. How many had he picked up in the morning?

M Mrs. Young told Ellen to look at some magazines and to throw away the old ones. Of the 25 magazines Ellen looked at, she kept 9. How many did she throw away?

N Mrs. Young wrapped a birthday present for a friend. After she had used 72 in. of ribbon from a spool, she found she had 36 in. left. How much ribbon was on the spool at first?

O Mrs. Young asked Ellen to help her set the table for the evening meal. Ellen needed 4 forks and 8 spoons for the table. She needed how many times as many spoons as forks?

P Ellen put some pictures in her scrapbook. She put some pictures in the scrapbook before lunch, and she put in 18 more after lunch. In all, she put 35 pictures in the scrapbook. How many had she put in before lunch?

Q A small camera that Ellen wanted to buy cost $4.00. How much money did she need to put with the 75¢ that she had earned so that she could buy the camera?

R Bill spent 72¢ of the money that he had earned for colored pencils. Each pencil cost 6¢. How many colored pencils did Bill buy?

Keeping skillful

Find the sum.

A 892, 643, 918
B 28, 16, 43, 37
C 606, 125, 463
D 711, 233, 85
E 540, 300, 160
F 81, 38, 19, 44
G 361, 288, 517
H 14, 86, 92, 65
I 473, 28, 67
J 916, 434, 300
K 638, 245, 109
L 21, 54, 86, 33
M 518, 349, 294

A $\square + 829 = 900$
B $38 \times \$2.46 = \square$
C $846 \div \square = 9$
D $1170 - 364 = \square$
E $462 - \square = 285$
F $614 + \square = 703$
G $62 \times 87 = \square$
H $317 - \square = 188$
I $744 \div \square = 8$
J $17 \times \$1.05 = \square$
K $\square - 281 = 403$
L $\square + 317 = 517$
M $69 \div 4 = \square$
N $39 \times 416 = \square$

A $87 \div \square = 3$
B $124 \div 6 = \square$
C $490 \div 9 = \square$
D $68 \div \square = 4$
E $175 \div 7 = \square$
F $424 \div \square = 8$
G $94 \div 5 = \square$

A $1563 \div 24 = \square$
B $874 \div 19 = \square$
C $891 \div 14 = \square$
D $888 \div 24 = \square$
E $2734 \div 65 = \square$
F $1040 \div 54 = \square$

Side trip

A Look at the picture. Letters are used for numerals. Numerals like these are called Roman numerals.

B Look at the numerals below. What is the Roman numeral for 1? For 5? For 10?

C Find the Roman numeral for 4. Find the Roman numeral for 6. How are these numerals different?

I	1	VI	6	XX	20
II	2	VII	7	XXI	21
III	3	VIII	8	XXII	22
IV	4	IX	9	XXX	30
V	5	X	10	XXXI	31

D Read the numerals in the picture.

E What is the Roman numeral for 20? This numeral means 2 tens. XXI, or 21, means 2 tens and 1. XXII, or 22, means 2 tens and 2. Now write the Roman numerals for 21 to 29.

F What is the Roman numeral for 30? This numeral means 3 tens. XXXI, or 31, means ▒ tens and ▒. XXXII, or 32, means ▒ tens and ▒. Now write the Roman numerals for 31 to 39.

G XI means 1 ten and 1, or ▒. Now write the Roman numerals for 11 to 19.

Read these Roman numerals.

A IV	**B** XII	**C** XXXIV	**D** XV
E III	**F** VIII	**G** XIX	**H** XXVI

Write with Roman numerals.

A 24	**B** 16	**C** 7	**D** 33	**E** 13
F 9	**G** 28	**H** 5	**I** 25	**J** 36
K 4	**L** 19	**M** 39	**N** 20	**O** 15

Keeping skillful

A $476 \div 9 = ▒$	**A** $▒ + 385 = 600$	**G** $6800 - 1178 = ▒$	**A** $382 \div 24 = ▒$
B $378 \div ▒ = 7$	**B** $217 - 136 = ▒$	**H** $▒ + 107 = 314$	**B** $763 \div 19 = ▒$
C $29 \div 2 = ▒$	**C** $35 + ▒ = 121$	**I** $▒ - 255 = 423$	**C** $161 \div 43 = ▒$
D $640 \div ▒ = 8$	**D** $▒ - 412 = 302$	**J** $3712 - 685 = ▒$	**D** $610 \div 58 = ▒$
E $305 \div 4 = ▒$	**E** $36 + 87 = ▒$	**K** $▒ + 89 = 110$	**E** $680 \div 17 = ▒$
F $114 \div ▒ = 6$	**F** $209 - ▒ = 43$	**L** $684 + 137 = ▒$	**F** $591 \div 36 = ▒$

Moving forward

Now you will learn something new about measurement. You will learn about the mile.

A

5280 feet = 1 mile

5280 ft. = 1 mi.

B

C

D

A In Picture A, how high is the airplane flying?

B Picture B shows Tony's home and school. How far does Tony have to go to school?

C The clocks in Picture B show the time when Tony left home and when he got to school. How long did it take Tony to walk the mile to school?

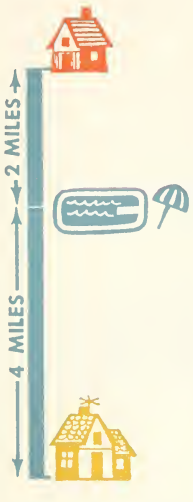
D Where Tony lives, 8 blocks are equal to 1 mile. How many blocks equal 1 mile where you live?

E About how long does it take you to walk 1 mile?

F Picture C shows the length of Tony's step. His step is about how long?

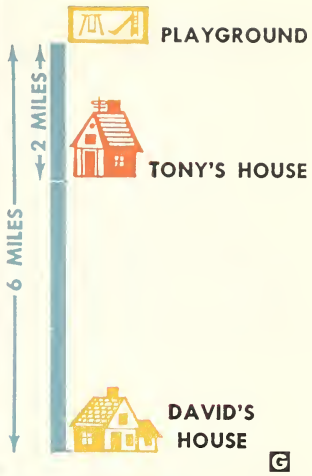
G Picture C also shows what Tony used to count his steps one day. By noon he had taken 2640 steps. If each step was about 2 ft. long, had he walked about 1 mile? How do you know?

H Each of your steps is about how long?



E

F



G

I There are 123 cars in the train in Picture D. Each car is 43 feet long. Is the train about 1 mile long? How do you know?

J There are 1760 yards in a mile. Is this equal to 5280 feet? How do you know?

K Look at Picture E. The red house is how far from the yellow house?

L Now look at Picture F. John rode his bicycle from the Whites' house to the Blocks' house. How many miles did he ride?

M In Picture G, David's house is how far from the playground? Tony's house is how far from the playground?

N David's house is how far from Tony's house?

Now you should know what we mean by a mile.

Keeping skillful

A $87 \div \square = 3$
B $244 \div 7 = \square$
C $620 \div 9 = \square$
D $61 \div 2 = \square$
E $465 \div \square = 5$
F $384 \div \square = 6$

A $60 \times 84 = \square$
B $242 \times 19 = \square$
C $35 \times 107 = \square$
D $88 \times 43 = \square$
E $240 \times 56 = \square$
F $12 \times 400 = \square$

A $\square + 1235 = 1480$
B $6613 - 814 = \square$
C $56 + \square = 100$
D $817 + 396 + 75 = \square$
E $\square - 1202 = 1438$
F $911 - \square = 264$

Moving forward

On pages 228 and 229 you will learn more about everyday uses of measurement.

1 ton **A**

2000 pounds = 1 ton **B**

2000 lb. = 1 T. **C**

D

E

A Each pile in Pictures A, B, and C weighs 1 ton. Which pile is largest? Which is smallest?

B Why is the pile in Picture A larger than the pile in Picture B?

C Why are all the piles different in size?

D Should the elevator in Picture D carry as much as $1\frac{1}{2}$ T.?

E Imagine that each person in the elevator weighs 175 lb. Is the elevator carrying too many persons?

F Should the elevator carry as many as 12 persons? Again imagine that each person in the elevator weighs 175 lb.

G In Picture E the truck and the stone together weigh 16,000 lb. Should the truck go over the bridge? Why or why not?

H The truck is how many tons too heavy for the bridge? The truck is how many pounds too heavy?

F

G

I The coal truck in Picture F weighs how many pounds?

J Does the truck weigh exactly 3 T.? How do you know?

K Imagine that the truck has 2 tons of coal in it. How much would the truck and the coal weigh altogether?

L Should this truck with the coal go over the bridge shown in Picture E? Why or why not?

M Look at Picture G. How many pounds of coal are in the truck?

N Is this amount of coal more than or less than 1 ton? How much more or less than 1 ton is it?

O How many pounds are there in 5 tons? Do the truck and the coal together weigh more or less than 5 tons?

P Should the truck go over the bridge shown in Picture E? Why or why not?

Now you should know how the ton is used in measurement.

Keeping skillful

A $36 + 117 + 420 = \square$

B $720 \times 46 = \square$

C $\square - 621 = 189$

D $840 - 159 = \square$

E $364 \div 5 = \square$

F $\square + 197 = 400$

G $95 \div 7 = \square$

H $300 - \square = 62$

I $63 + \square = 110$

J $\square - 762 = 4100$

K $50 \times 87 = \square$

L $\square + 212 = 430$

M $758 - \square = 109$

N $642 + \square = 809$

O $855 \div \square = 9$

Moving forward

In this lesson you will learn more about how liquids are measured.

2 tablespoonfuls = 1 fluid ounce
2 tbs. = 1 fl. oz.

A

A The bottle in Picture A holds 1 fluid ounce. How many tablespoonfuls does it hold?

B How many tablespoonfuls would fill a 6-ounce bottle?

C Look at Picture B. How many fluid ounces would fill 1 cup?

D How many tablespoonfuls would fill 1 cup?

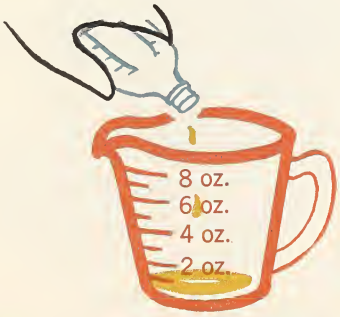
E How is the first cup marked?

F Can you tell exactly how much has been poured into the first cup?

G How is the second cup marked?

H How is the third cup marked?

I Is one third of a cup more than or less than one fourth of a cup?



B

8 fluid ounces = 1 cup

8 fl. oz. = 1 c.

2 cups = 1 pint 2 c. = 1 pt. **C**

1 pt. 2 fl. oz. **D**

15 fl. oz. **E**

1 pt. 10 fl. oz. **F**

6 fl. oz. **G**

3 qt. **H**

1 qt. 14 fl. oz. **I**

J Look at Picture C. How many cups equal 1 pint? One pint equals how many fluid ounces?

K How many fluid ounces will the can in Picture D hold?

L How many tablespoonfuls would fill the can in Picture E? Is that amount more than or less than 1 cup? How much more or less is it?

M How many fluid ounces will the can in Picture F hold?

N In Picture G, how many fluid ounces does the can hold? Does it hold more than or less than 1 cup?

O How many tablespoonfuls will the can in Picture G hold?

P Look at Picture H. How many pints will this can hold? How many cups will it hold? How many fluid ounces will it hold?

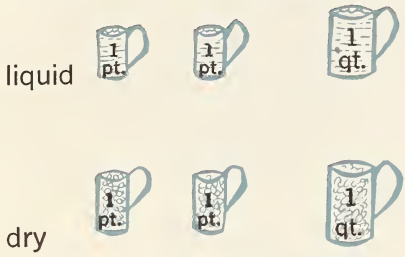
Q Look at Picture I. There are how many fluid ounces in a quart? How many fluid ounces will this can hold?

A 4 c. = ▒ pt.
B ▒ pt. = 12 c.
C 16 fl. oz. = ▒ c.
D ▒ c. = 5 pt.
E 8 fl. oz. = ▒ tbs.
F 4 c. = ▒ fl. oz.
G ▒ fl. oz. = 8 tbs.
H ▒ c. = 24 fl. oz.
I 16 c. = ▒ qt.
J 16 qt. = ▒ c.

Now you should understand the fluid ounce and the cup as they are used in measurement.

Moving forward

The pint and quart that you have learned about are called liquid measures because they measure liquids. You will now learn about dry measures.



2 pints = 1 quart **A**

8 dry quarts = 1 peck
8 dry qt. = 1 pk. **B**

4 pecks = 1 bushel
4 pk. = 1 bu. **C**

A Look at Picture A. The dry pint and quart are used for measuring things like berries and beans. How are the dry pint and quart different from the liquid pint and quart? Which pint looks larger? Which quart looks larger?

B Why are the dry pint and quart called dry measures?

C Should you use the dry pint and quart to measure milk? To measure popcorn?

D Name some other things that might be measured by the dry pint and quart.

E Name some things that you would measure by the liquid pint and quart.

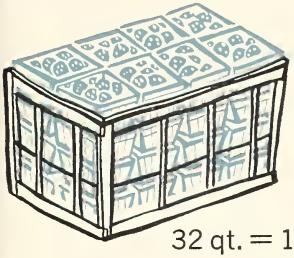
F Now look at Picture B. How many dry quarts are in one peck?

G Would 8 liquid quarts fill a peck measure? Why or why not?

H Name some things that might be measured by the peck.

I Picture C shows a bushel. How many pecks are there in one bushel?

J Name some things that might be measured by the bushel. Would you measure the same things by the bushel that you would measure by the peck?



32 qt. = 1 bu. **D**

E

F

G

K Look at Picture D. The large box holds 1 bushel. There are how many dry quarts in a bushel?

L How many dry pints are there in a bushel?

M Look at Picture E. How much does the peck of potatoes weigh? Would there always be the same number of potatoes in a peck? Why do you think so?

N How much does the bushel of corn in Picture F weigh? Could a farmer have one full bushel basket of corn that weighed 55 lb. and another bushel basket just as full that weighed 62 lb.?

O How much does the bushel basket of apples in Picture G weigh? Does a bushel basket full of apples always weigh 49 lb.? Why or why not?

P Dry foods like beans and sugar are more often sold by the pound than by the quart, peck, or bushel. Why?

A 4 bu. = ▒ pk.
B 2000 lb. = ▒ T.
C 2 pt. = ▒ fl. oz.
D 32 qt. = ▒ bu.
E 8 c. = ▒ pt.
F 7 lb. = ▒ oz.
G 16 qt. = ▒ pk.
H 36 bu. = ▒ pk.
I 100 qt. = ▒ gal.
J 3 pk. = ▒ qt.
K 2 T. = ▒ lb.

L 1 qt. = ▒ c.
M 4 pt. = ▒ c.
N 24 fl. oz. = ▒ c.
O 4 bu. = ▒ qt.
P 64 tbs. = ▒ fl. oz.
Q 8 c. = ▒ fl. oz.
R 20 pk. = ▒ bu.
S 5 c. = ▒ fl. oz.
T 32 tbs. = ▒ fl. oz.
U 8 fl. oz. = ▒ tbs.
V 5 doz. = ▒ things

Now you should understand how dry measures are different from liquid measures.

Exploring problems

A

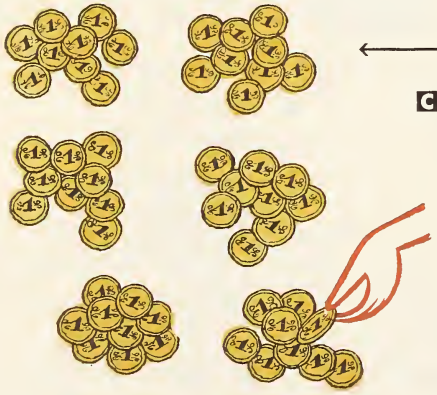
Each week for 6 weeks Tony wrote down how much money he had saved that week. He saved 10¢, 6¢, 8¢, 12¢, 10¢, and 8¢. He said to himself, "Suppose I had saved all that money by putting the same amount in my bank each week. How much would I have needed to save each week?"

B

First find how much money Tony saved in the 6 weeks. Think of the money as pennies.

$10¢ + 6¢ + 8¢ + 12¢ + 10¢ + 8¢ =$ ▒

The sum is 54¢.



C

Tony saved 54¢ in all. Imagine that he saved the same number of pennies each week. How many pennies did he save each week?

Total number of pennies saved.

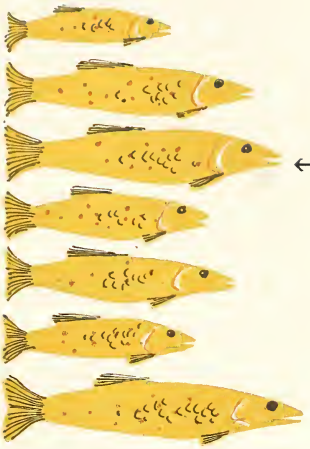
Number of weeks.

$54 \div ▒ = 6$

Number of pennies he needed to save each week.

54 divided by 6 is 9.

The amount Tony would have had to save each week is the average amount. 9¢ is the average.
The average is 9¢ a week. The average is 9¢ per week.



A When Bill asked David about his fishing trip, David said, "I caught 7 fish, and they averaged about 11 inches long."

The fish David caught were 8 in., 12 in., 13 in., 10 in., 11 in., 9 in., and 14 in. long.
Why did David say that the average length was 11 inches? He meant that if the fish had all been the same length, each fish would have been 11 inches long.

B To find the average length of the fish, David made two equations.

What do these numbers stand for?

$8 + 12 + 13 + 10 + 11 + 9 + 14 = \square$

What does this stand for?

How did David get this number?

What will this number tell you?

$77 \div \square = 7$

What does this stand for?

The average length of the fish was ▒ inches.

A The heights of the boys who live on Bill's block are 53 in., 54 in., 52 in., and 49 in. What is the average height of these boys?

THINK First add their heights. Then divide 208 by 4. How did you get 208? Why do you divide by 4?

B The weights of the 4 boys who live on Bill's block are 68 lb., 70 lb., 55 lb., and 63 lb. What is the average weight of these boys?

THINK What equation must you make first? What should your second equation be?

C Tony, Jim, and Bill timed themselves when they worked a puzzle. Tony worked for 17 min., Jim worked for 22 min., and Bill worked for 21 min. What was the average time it took them to do the puzzle?

D Sue bought 4 prizes for a party. The prizes cost 39¢, 25¢, 50¢, and 30¢. What was the average cost of the prizes?

E Peggy wrote down how much she spent for candy each week for 5 weeks. She spent 12¢, 10¢, 20¢, 9¢, and 14¢. She spent an average of how much per week for candy?

F In nine months the children in the fourth grade missed a total of 279 days of school. On the average, how many days of school were missed per month?

THINK Why do you need to make only one equation for this problem?

G In 8 weeks Don earned a total of $3.04. He earned an average of how much per week?

THINK How many equations will you make for this problem? Will the answer tell you exactly how much Don earned in any one of the 8 weeks?

H One Friday Tom had 22 words right on the weekly spelling test. The next Friday he had 16 words right, and the third Friday he had all 25 words right. He had an average of how many spelling words right per week?

I Carol had 18 spelling words right one Friday, 21 words right the next Friday, 24 words right the third Friday, and 17 words right the fourth Friday. What was Carol's spelling average for the 4 weeks?

J In 6 months Sue read 30 books at home. She read an average of how many books per month at home?

Now you should understand the meaning of average, and you should be able to find the average.

Keeping skillful

A 36 qt. = ▒ gal.
B 15 lb. = ▒ oz.
C 20 c. = ▒ pt.
D 3 T. = ▒ lb.
E 5 bu. = ▒ pk.
F 1 pt. 5 fl. oz. = ▒ fl. oz.
G 6000 ft. = 1 mi. ▒ ft.
H 3 pk. = ▒ qt.
I 14 tbs. = ▒ fl. oz.
J 3315 lb. = 1 T. ▒ lb.
K 75 ft. = ▒ yd.
L 6 c. = ▒ fl. oz.
M 44 pk. = ▒ bu.
N 6 yd. = ▒ in.
O 5 fl. oz. = ▒ tbs.

Side trip

A

B

C

D

E

A Picture A shows a road sign. Tell how the numerals are used in each of the other pictures.

B Does Mr. Brown's house number in Picture B mean that there are 2536 or more houses in his city? How do you know?

C How do you think Mr. Brown says his house number?

D Do you think the football players in Picture E are the twenty-fourth, fifty-sixth, and eightieth boys on their team? Why?

E Look at Picture C. Would you say this numeral "3 million 46 thousand 229" or "3-oh-4-6-2-2-9"? Why?

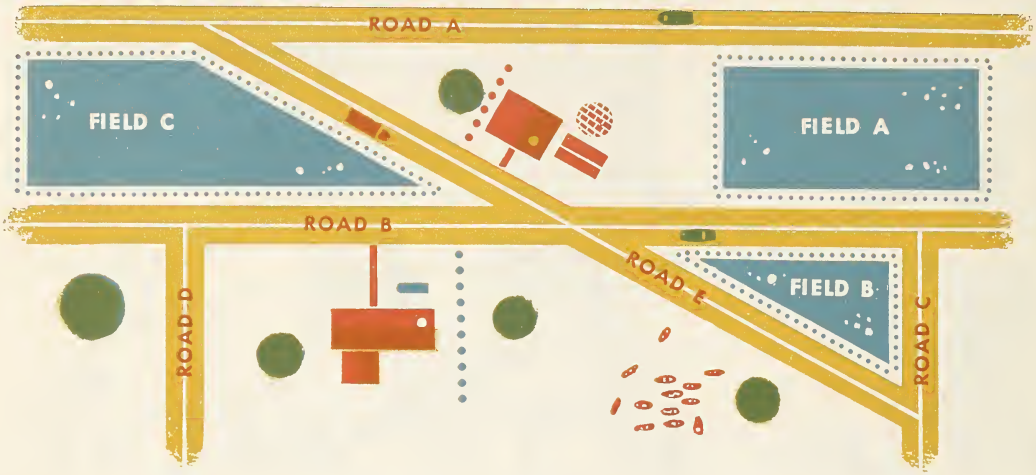
F Look at Picture D. How would you say the numeral?

G You see that numerals do not always mean how many or how much. Sometimes they are used just as names are used. Why are numerals sometimes used instead of names?

Read these numerals in the different ways you have learned.

A	5040	H	2,071,990
B	6800	I	96,570
C	72,159	J	4111
D	80,320	K	7,009,700
E	1346	L	34,021
F	4,001,708	M	2990
G	1020	N	13,405,730

Side trip



A This map of David's neighborhood was made from an airplane. How many roads are shown on this map?

B Are Roads A and B the same distance apart as far as you can see? These two roads are parallel.

C Are Roads C and D parallel? Why?

D Is Road E parallel to any other road on the map? How do you know?

E Find the place where Road C and Road B join. They make square corners where they join. Square corners are called right angles.

F Does Road E make right angles where it joins any other road?

G What other two roads join to make right angles?

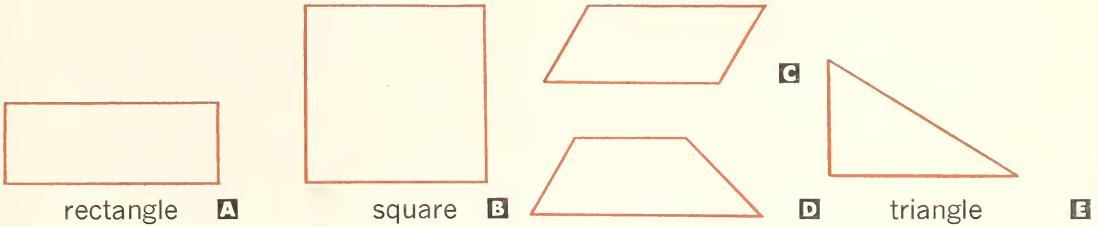
H Is each corner of Field A a right angle? How do you know?

I Are the long sides of Field A parallel? Are the short sides of this field parallel?

J Look at Field B. Are any of its sides parallel? Are any of its corners right angles?

K Look at Field C. Are any of its sides parallel? How many of its corners are right angles?

L Are the rails on a railroad parallel? Why?



A Look at Rectangle A above. How many sides has it? Are its long sides parallel? Are its short sides parallel? How many right angles has it?

B How many sides has the square? Are there 4 right angles? How is it different from Rectangle A? A square is a rectangle with equal sides.

C Look at Picture C. How many sides are there? Are any of these sides parallel? Are there any right angles in Picture C? Is it a rectangle? Why or why not?

D Are there any parallel sides in Picture D? Are there any right angles? Is Picture D a rectangle? Why or why not?

E Picture E is a triangle. A triangle has only 3 sides. Has this triangle any right angles?

F Can you draw a triangle that has no right angles? If you can, draw one.

G Can you draw a triangle that has 3 right angles?

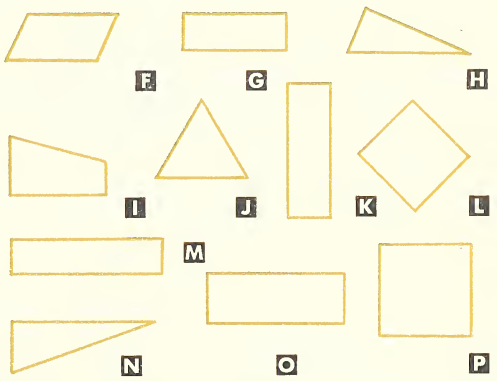
H Find each yellow rectangle below.

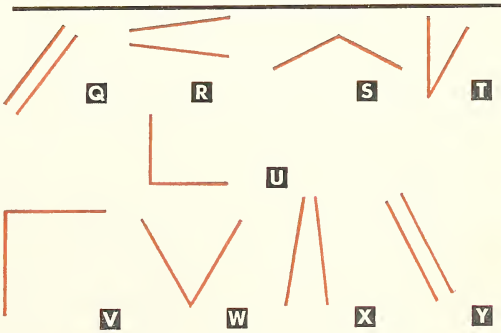
I Find each yellow square.

J Find each yellow triangle.

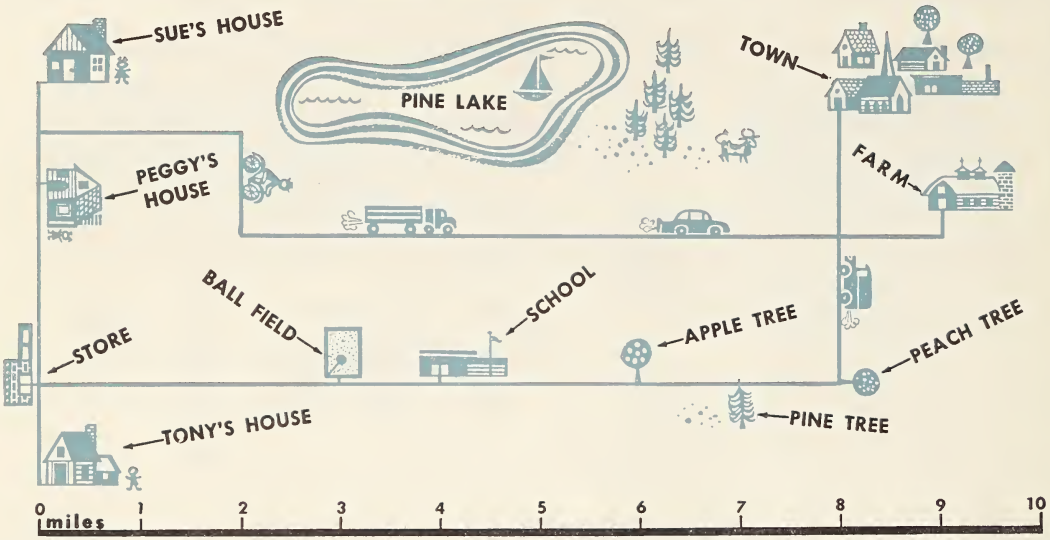
K Find each red right angle below.

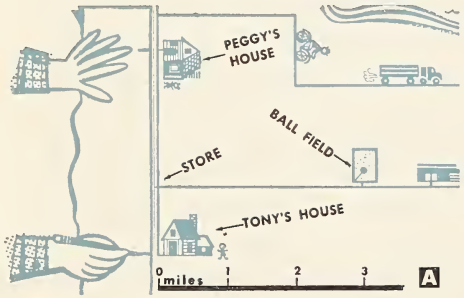
L Find each set of red parallel lines.

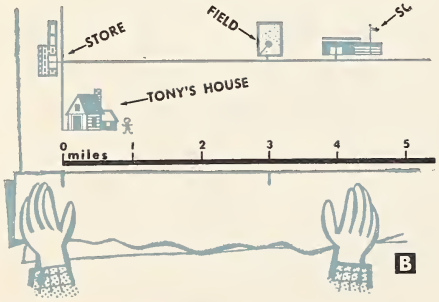




Side trip







A Tony's father made this picture map to show the neighborhood. Below the map he put a scale to show distances. How many miles does the scale show?

B Now look at Picture A. Tony is marking on a piece of paper the distance from his house to Peggy's house. In Picture B he is putting his marked piece of paper on the scale on the map to see how far apart the houses are. They are how many miles apart?

C Use a piece of paper and the scale on the map to see how far Tony's house is from Sue's house.

D About how long is Pine Lake?

E About how far apart are the school and the ball field?

F The distance from the school to the store is about how many times as far as the distance from Peggy's house to the store?

G How far would you have to go by road to go from Peggy's house to the ball field? Why should you put 2 marks on your measuring paper?

H Which of the three trees is about 3 mi. from the ball field? Which tree is about 2 mi. from the school? Why should you mark your measuring paper from the scale before you answer these questions?

Now use a piece of paper and the scale on the map to find about how far apart these places in the neighborhood are.

I Tony's house and the store
J Sue's house and Peggy's house
K The farm and the peach tree
L The town and the school
M Tony's house and the school
N Sue's house and the school
O Sue's house and the apple tree
P The store and the ball field
Q Peggy's house and the apple tree
R The farm and the school
S Sue's house and the store
T Tony's house and the ball field
U The pine tree and the ball field
V The peach tree and the store
W The ball field and the town

Keeping skillful

A 3 ft. = ▒ in.
B 72 pt. = ▒ gal.
C 3 c. = ▒ fl. oz.
D 2500 lb. = 1 T. ▒ lb.
E 4 pk. = ▒ qt.
F 36 pk. = ▒ bu.
G 9 fl. oz. = ▒ tbs.
H 68 wk. = 1 yr. ▒ wk.
I 12 lb. = ▒ oz.
J 1810 yd. = 1 mi. ▒ yd.
K 10 c. = ▒ pt.
L 7 bu. = ▒ pk.

A $45 + 162 + 390 = ▒$
B $58 \times 104 = ▒$
C $▒ - 803 = 297$
D $168 \div 4 = ▒$
E $▒ + 562 = 1000$
F $3001 - 199 = ▒$
G $87 \div 5 = ▒$
H $494 - ▒ = 285$
I $83 + 17 + 50 = ▒$
J $460 + ▒ = 502$
K $730 - 491 = ▒$
L $65 \times 97 = ▒$

A $63 \div ▒ = 3$
B $89 \div 5 = ▒$
C $162 \div 7 = ▒$
D $156 \div ▒ = 6$
E $99 \div ▒ = 9$
F $518 \div 8 = ▒$

A $821 \div 21 = ▒$
B $932 \div 54 = ▒$
C $1161 \div 27 = ▒$
D $5047 \div 74 = ▒$
E $1257 \div 33 = ▒$

Using arithmetic

A During the summer Bill and Tom took a train trip to Los Angeles. Round-trip tickets to Los Angeles and back home cost $9.13 each. How much did the 2 round-trip tickets cost?

B If the boys had bought one-way tickets, each ticket would have cost $5.05. How much would 2 one-way tickets to Los Angeles and back have cost one of the boys?

C One round-trip ticket cost how much less than 2 one-way tickets?

D To earn some money for the trip, Tom helped in his father's store for two weeks. He earned some money the first week, and he earned $3.65 the second week. In all he earned $8.20. How much did he earn the first week?

E The conductor on the train told the boys that the train would have gone 1034 miles by the time it got to Los Angeles. The boys were going only 183 miles. How far had the train gone before the boys got on?

F A man had some newspapers to sell on the train. He sold each newspaper for 5¢. In all he sold $1.90 worth of newspapers. How many newspapers had he sold?

G The boys ate lunch on the train. Bill's lunch cost $1.25. Tom's lunch cost $1.41. How much in all did the boys spend for lunch?

H Tom's lunch cost how much more than Bill's lunch?

I Each of the boys had a new book to read on the train. Bill read 83 pages in his book, and Tom read 65 pages in his book. Tom read how many fewer pages than Bill?

J Tom's book had 144 pages in it. How many pages did he still have to read to finish the book?

K The conductor told the boys that the train kitchen was about 14 ft. long and 7 ft. wide. The kitchen was about how many times as long as it was wide?

L The boys counted the people in their car. There were 27 people. Then more people got on. Later, the boys counted the people again. There were 51 people in the car. How many more people had got on?

M The conductor told the boys that there were 468 people on the train, and there were 9 cars on the train. What was the average number of people per car?

N The conductor gave each person on the train a yellow ticket that showed how far he was going. After he had given a ticket to everyone, he had 207 tickets left. How many tickets did he have at first?

O Bill and Tom bought a bag of small chocolate candy bars on the train. Bill ate 12 of the small candy bars, and Tom ate 9. How many of the candy bars did the two boys eat?

P Bill counted the rest of the candy bars and found that there were 16 left. How many candy bars were there to begin with?

Q Tom had $15.00 to spend for his ticket and for things on the train. When he got to Los Angeles, he had $2.86 left. How much had he spent on the trip?

R The train ride to Los Angeles took 4 hours. How many minutes was this?

S In Los Angeles Bill bought a package of 8 stamps for his collection. He paid $1.28 for the package of stamps. What was the average cost per stamp?

T The boys had 21 days to spend in Los Angeles. How many weeks was this?

Keeping skillful

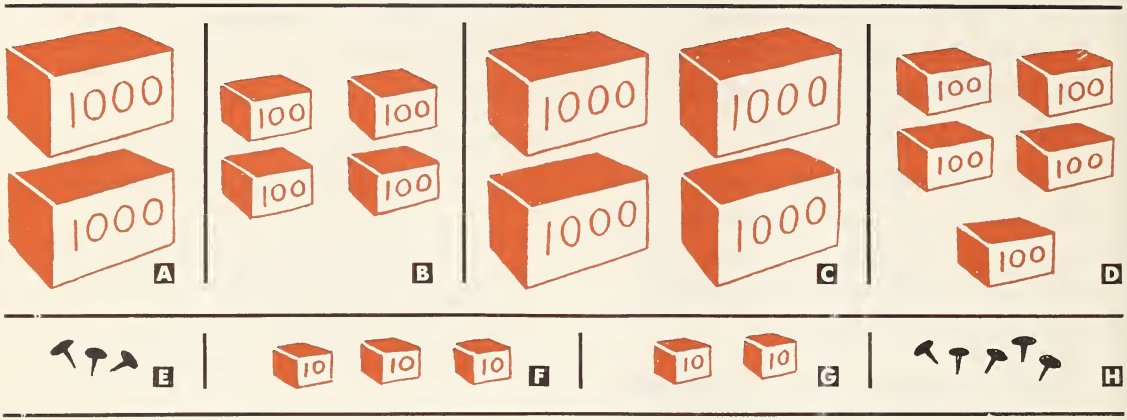
A 6420 ft. = 1 mi. ▢ ft.
B 64 qt. = ▢ gal.
C 20 bu. = ▢ pk.
D 715 da. = 1 yr. ▢ da.
E 3614 lb. = 1 T. ▢ lb.
F 7 fl. oz. = ▢ tbs.
G 40 fl. oz. = ▢ c.
H 56 qt. = ▢ pk.
I 20 pt. = ▢ qt.
J 43 in. = 1 yd. ▢ in.
K 63 da. = ▢ wk.
L 18 mo. = 1 yr. ▢ mo.
M 7 c. = ▢ fl. oz.
N 50 tbs. = ▢ fl. oz.
O 40 pk. = ▢ bu.

A $150 + 44 + 390 = ▢$
B $176 \div ▢ = 8$
C $▢ - 560 = 821$
D $38 \times 49 = ▢$
E $7003 - 154 = ▢$
F $91 + ▢ = 112$
G $▢ + 290 = 400$
H $562 \div 7 = ▢$
I $5030 - ▢ = 2151$
J $65 + 88 + 13 = ▢$
K $320 \div ▢ = 8$
L $▢ + 206 = 530$
M $75 \times 94 = ▢$
N $417 - ▢ = 18$
O $417 + ▢ = 618$

A $56 \div ▢ = 4$
B $158 \div 9 = ▢$
C $134 \div ▢ = 2$
D $206 \div 4 = ▢$
E $487 \div 6 = ▢$
F $245 \div ▢ = 5$
G $783 \div 9 = ▢$

A $918 \div 27 = ▢$
B $2667 \div 49 = ▢$
C $765 \div 12 = ▢$
D $3255 \div 40 = ▢$
E $2210 \div 34 = ▢$
F $1897 \div 94 = ▢$
G $3596 \div 58 = ▢$

Looking back



What two or more pictures above would you use to make each of the numbers below?

A 4423	D 2400	G 505	J 2403
B 4005	E 425	H 2023	K 4035
C 523	F 2020	I 535	L 2033

Read.

A	10,001	M	7,211,386
B	8907	N	99,402,503
C	7623	O	867,111,002
D	877,350	P	6,400,689
E	7658	Q	903,215,387
F	95,000	R	100,003,011
G	2009	S	862,340,190
H	455,200	T	1,000,007
I	8936	U	4,687,392
J	789,142	V	1,283,999
K	598,444	W	930,114,850
L	77,380	X	5,002,316

Write with numerals.

- A one million two hundred thousand
- B thirty thousand six hundred four
- C one hundred twenty thousand two hundred seventy-nine
- D twelve thousand six hundred eighty-two
- E three million fourteen thousand nine hundred one
- F six hundred thousand five hundred sixteen
- G eighteen thousand nine hundred thirty-one
- H four million seven
- I five hundred thousand twenty-two
- J seven million one hundred thousand six hundred eighty-nine
- K one hundred twenty thousand nine hundred fourteen
- L one hundred thousand one

Looking back

A 1 dollar = ▒ dimes 10 pennies
B 1 half dollar = ▒ nickels
C 1 quarter = 1 dime ▒ nickels
D 1 half dollar = 1 quarter ▒ nickels
E 1 dollar = ▒ quarters 10 nickels
F 1 half dollar = ▒ dimes 4 nickels
G 1 dollar = 8 dimes ▒ nickels
H 1 dollar = 2 quarters ▒ dimes
I 1 quarter = 2 dimes ▒ pennies
J 1 half dollar = ▒ dimes

For each problem below, draw the coins and bills that you would use in making change. Under each coin and bill write the number you would say as you make the change.

A Tony bought a model engine for $1.89. He gave the clerk $2.

B Mr. Block bought a calendar for $.69. He gave the clerk $1.

C Peggy bought a dog collar for $2.35. She gave the clerk $5.

D Mrs. Block bought some potatoes for $.53. She gave the clerk $1.

E Mrs. White bought a jar of honey for $.67. She gave the clerk $.75.

F Mrs. Sharp bought some paper napkins for $.26. She gave the clerk $1.

G Mr. Sharp bought a clock for $3.74. He gave the clerk $10.

Each problem below tells you what a clerk said when he made change. For each problem draw the coins and bills he gave in change. Remember that the first amount is always the cost of the thing he sold.

A 64¢, 65, 75, $1
B $1.34, 1 thirty-five, 1 forty, 1 fifty, $2
C $2.85, 2 ninety-five, 3, 4, $5
D $7.50, 7 seventy-five, 8, 9, $10
E 59¢, 60, 70, 75, 85, 95, $1
F $2.20, 2 twenty-five, 2 fifty, 3, 4, $5

A David spent $1.17 for 3 books. Each book cost the same amount. How much did each book cost?

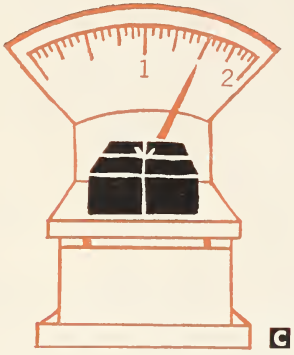
B Some small flags that June wants to buy cost $.09 each. How many can she buy for $.50? How much money will she have left over?

C In 5 days Bill spent $1.70 for meals at school. He spent an average of how many cents per day?

D Five boys earned $1.60 raking leaves. They shared the money equally. How much was each boy's share?

E Peggy spent $4 for 5 presents. She spent the same amount for each one. How much did each present cost?

Looking back



A Thermometer A shows what temperature?

B Thermometer B shows what temperature?

C Does the package on the scales in Picture C weigh more than or less than 1 lb.? How much more or less than 1 lb. does it weigh?

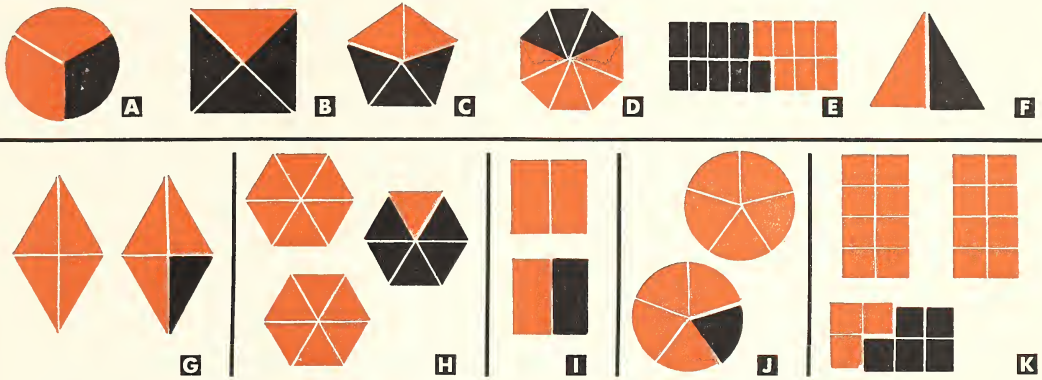
D Will the scales in Picture C weigh a 2 lb. 1 oz. package? Why or why not?

E Do you think you could weigh a 2 oz. letter on these scales? Why or why not?

A 12 in. = ▒ ft.
B 1 wk. = ▒ da.
C 1 pk. = ▒ qt.
D ▒ pk. = 1 bu.
E ▒ sec. = 1 min.
F 1 T. = ▒ lb.
G 1 c. = ▒ fl. oz.
H 1 bu. = ▒ qt.
I ▒ qt. = 1 gal.
J 1 mi. = ▒ ft.
K 365 da. = ▒ yr.
L 1 hr. = ▒ min.
M ▒ in. = 1 yd.
N 1 gal. = ▒ pt.
O 1 yd. = ▒ ft.
P ▒ mo. = 1 yr.
Q 1 hr. = ▒ min.
R ▒ pt. = 1 qt.
S ▒ oz. = 1 lb.
T ▒ wk. = 1 yr.
U 1 doz. = ▒ things
V ▒ c. = 1 pt.
W 1 da. = ▒ hr.
X ▒ tbs. =1 fl. oz.

A 4 gal. = ▒ pt.
B 18 c. = ▒ pt.
C 4 pk. = ▒ qt.
D 8 wk. = ▒ da.
E 24 pt. = ▒ gal.
F ▒ pt. = 14 qt.
G ▒ pk. = 5 bu.
H ▒ c. = 40 fl. oz.
I ▒ gal. = 16 qt.
J 5 pt. = ▒ c.
K 12 tbs. = ▒ fl. oz.
L ▒ min. = 3 hr.
M 64 qt. = ▒ pk.
N 4 yd. = ▒ in.
O 21 ft. = ▒ yd.
P 28 qt. = ▒ gal.
Q ▒ mo. = 4 yr.
R ▒ tbs. = 6 fl. oz.
A 1810 yd. = 1 mi. ▒ yd.
B 119 sec. = 1 min. ▒ sec.
C 38 qt. = 1 bu. ▒ qt.
D 480 da. = 1 yr. ▒ da.
E 6010 ft. = 1 mi. ▒ ft.
F 3000 lb. = 1 T. ▒ lb.
G 105 min. = 1 hr. ▒ min.
H 20 in. = 1 ft. ▒ in.
I 70 in. = 1 yd. ▒ in.

Looking back



A For each piece of paper shown in Pictures A to F above, write the numeral that tells what part of the piece of paper is red.

B Look at Pictures G to K. Then write two numerals for the red part of each set of pictures. For Picture G you can write $1\frac{3}{4}$ and $\frac{7}{4}$.

Read.

A	$1\frac{3}{10}$	**D**	$\frac{15}{8}$	**G**	$4\frac{1}{2}$	**J**	$1\frac{4}{5}$
B	$\frac{1}{5}$	**E**	$2\frac{1}{6}$	**H**	$\frac{7}{8}$	**K**	$3\frac{3}{8}$
C	$3\frac{1}{3}$	**F**	$\frac{9}{16}$	**I**	$1\frac{3}{6}$	**L**	$6\frac{15}{16}$

Write with numerals.

A one and seven eighths
B seven and five sixths
C eleven fifths
D four and nine sixteenths
E nine twelfths
F six and five ninths
G eight and one eighth

Use one of the pictures below to answer each example below. Use Picture L for Example L, and so on.

L $\frac{1}{2} = \frac{\square}{4}$ **N** $\frac{1}{2} = \frac{\square}{\square}$ **P** $\frac{1}{4} = \frac{\square}{\square}$ **R** $\frac{1}{3} = \frac{\square}{\square}$

M $\frac{1}{2} = \frac{\square}{\square}$ **O** $\frac{1}{4} = \frac{\square}{\square}$ **Q** $\frac{1}{4} = \frac{\square}{\square}$ **S** $\frac{1}{3} = \frac{\square}{\square}$

Looking back

A

$$\begin{array}{r|l} 7\overline{)87} & 10 \\ 70 & \\ \hline 17 & 2 \\ 14 & \\ \hline \square & \square \end{array}$$

- **A** Number in all is ▭.
- **B** Number in each group is ▭.
- **C** Number in 10 groups is ▭.
- **D** Total number of groups is ▭.
- **E** Number in 2 groups is ▭.
- **F** Number left over is ▭.

B

$$\begin{array}{r} 85 \\ 60 \\ \hline 145 \end{array}$$

- **G** Number in all is ▭.
- **H** Number in one group is ▭.
- **I** Number in the other group is ▭.

C

$$\begin{array}{r} 32 \\ 12 \\ \hline 20 \end{array}$$

- **J** Number in the group being taken away is ▭.
- **K** Number in the whole group is ▭.
- **L** Number left is ▭.

D

$$\begin{array}{r} 80 \\ 24 \\ \hline 320 \\ 1600 \\ \hline \square \end{array}$$

- **M** Number of groups is ▭.
- **N** Number in each group is ▭.
- **O** Number in 4 groups is ▭.
- **P** Number in all is ▭.
- **Q** Number in 20 groups is ▭.

A When you know the number of equal groups and the size of each equal group, how do you find the total number?

B When you know the number in all and the size of each equal group, how do you find the number of equal groups?

C When you know the number in all and the number of equal groups, how do you find the size of each equal group?

D When you know the number in one group and the number in another group, how do you find the total number?

E When you know the number in all and the number being taken away, how do you find the number left?

Checking up

Test 1

A When the fourth graders saw a movie, the 56 children were sitting in 4 rows of seats. The same number of children were in each row. How many were sitting in each row?

B Jim made a dog house. He paid 12¢ a foot for 30 ft. of boards. How much did he pay for the boards?

C Peggy said, "I had to throw 14 of my shells away because they were broken. I have 35 shells left." How many did she have to begin with?

D Nancy's mother baked 60 cookies. She used some of them for lunch. Then 44 cookies were left. How many cookies had she used for lunch?

E Tony had 123 baseball pictures. He gave 48 of them to Jack. How many baseball pictures did he have left?

F The height of the school flagpole is 18 ft. The height of a tree next to it is 25 ft. The tree is how much taller than the flagpole?

G The 56 fourth graders at the Lake School divided into teams of 8 each for races. There were how many teams?

H The population of one town is 6342. The population of another town is 2876. How much smaller is the population of the second town than that of the first town?

I Don drew pictures of moths and bees for his science notebook. He drew 12 pictures of moths and 6 pictures of bees. He drew how many times as many pictures of moths as of bees?

J At the Youngs' family picnic there were 18 grown-ups and 33 children. How many people were at the picnic?

K The model engine that Bill wanted to buy cost $6.30. He had only $3.75. How much more money did he need?

L Tom bought 25 new stamps. Then he had 90 stamps in all. How many did he have before he bought the new ones?

Test 2

A Mrs. White bought 3 bags of candy. Each bag cost 59¢. How much did all three bags of candy cost?

B The pond on the Cooks' farm is 125 ft. long and 69 ft. wide. It is how much longer than it is wide?

Now turn the page.

C There were 140 bottles of milk in the school kitchen one morning. At the end of the day there were only 18 bottles. How many bottles of milk did the children drink that day?

D Sue had 75 pictures of birds for her science notebook. She could put 5 pictures on a page. How many pages did she need for the pictures?

E Ann picked up 23 shells on the beach one day. Then she had 82 shells in her collection. How many shells did she have to begin with?

F Ellen had 25 records. She got some more for her birthday. Then she had 32 records. How many records did she get for her birthday?

G Jane spent $3.85 of the money she had in her bank for a present for her mother's birthday. Then she had $2.45 left in her bank. How much money was in her bank before she bought the present?

H Tom, Jack, and Bob shared the cost of a baseball and bat equally. The ball and bat together cost $2.97. How much was each boy's share of the cost?

I The Walls took 7 peanut butter and 28 chicken sandwiches to a picnic. They took how many times as many chicken sandwiches as peanut butter sandwiches to the picnic?

J At the Lake School there were 380 children. 197 of the children were boys, and the rest were girls. How many girls were at the Lake School?

K The fourth graders had 16 addition examples and 15 subtraction examples to work. In all, they had how many addition and subtraction examples to work?

L The Youngs looked for a new clock. One clock they saw cost $8.00. Another one cost $6.89. The second clock cost how much less than the first clock?

Test 3

A $5 \times 8 =$ ▒
B $9 \times 9 =$ ▒
C $9 \times 6 =$ ▒
D $6 \times 7 =$ ▒
E $8 \times 8 =$ ▒
F $9 \times 8 =$ ▒
G $7 \times 7 =$ ▒
H $5 \times 9 =$ ▒
I $7 \times 6 =$ ▒
J $9 \times 7 =$ ▒
K $7 \times 8 =$ ▒
L $6 \times 9 =$ ▒

Test 4

A $40 \div 8 =$ ▒
B $72 \div 9 =$ ▒
C $54 \div 6 =$ ▒
D $81 \div 9 =$ ▒
E $56 \div 8 =$ ▒
F $45 \div 5 =$ ▒
G $42 \div 7 =$ ▒
H $63 \div 9 =$ ▒
I $64 \div 8 =$ ▒
J $54 \div 9 =$ ▒
K $56 \div 7 =$ ▒
L $42 \div 6 =$ ▒

Test 5

Find the sum.

A 365, 442, 29
B 26, 17, 19, 47
C 796, 482, 650
D 134, 56, 817
E 72, 89, 12, 35
F 820, 563, 418
G 44, 824, 72
H 652, 794, 318
I 75, 94, 86, 23

Test 6

A $6060 - 4832 =$ ▢
B $519 - 287 =$ ▢
C $2113 - 1406 =$ ▢
D $100 - 48 =$ ▢
E $7321 - 5643 =$ ▢
F $4000 - 1117 =$ ▢
G $932 - 875 =$ ▢
H $1246 - 738 =$ ▢
I $8071 - 6984 =$ ▢
J $530 - 336 =$ ▢

Test 7

A $5 \times 632 =$ ▢
B $8 \times 114 =$ ▢
C $7 \times 420 =$ ▢
D $4 \times 325 =$ ▢
E $6 \times 118 =$ ▢
F $719 \times 9 =$ ▢
G $550 \times 2 =$ ▢
H $848 \times 5 =$ ▢
I $975 \times 3 =$ ▢
J $487 \times 9 =$ ▢

Test 8

A $84 \times 330 =$ ▢
B $29 \times 116 =$ ▢
C $57 \times 82 =$ ▢
D $36 \times 743 =$ ▢
E $68 \times 289 =$ ▢
F $605 \times 45 =$ ▢
G $808 \times 79 =$ ▢
H $560 \times 90 =$ ▢
I $495 \times 63 =$ ▢
J $99 \times 87 =$ ▢

Test 9

A $225 \div 3 =$ ▢
B $486 \div 5 =$ ▢
C $60 \div 2 =$ ▢
D $569 \div 9 =$ ▢
E $780 \div 8 =$ ▢
F $116 \div 4 =$ ▢
G $630 \div 7 =$ ▢
H $403 \div 6 =$ ▢
I $369 \div 9 =$ ▢
J $424 \div 8 =$ ▢

Test 10

A ▢ $+ 650 = 1000$
B $884 + 297 =$ ▢
C $265 +$ ▢ $= 402$
D $917 + 86 =$ ▢
E $634 +$ ▢ $= 871$
F ▢ $+ 900 = 1360$
G $891 +$ ▢ $= 1102$
H $595 + 605 =$ ▢
I ▢ $+ 388 = 923$
J $748 +$ ▢ $= 800$

Test 11

A $8600 - 1432 =$ ▢
B ▢ $- 270 = 631$
C $934 - 884 =$ ▢
D $673 -$ ▢ $= 594$
E ▢ $- 589 = 278$
F $1001 -$ ▢ $= 200$
G $4368 - 2958 =$ ▢
H ▢ $- 354 = 89$
I $680 -$ ▢ $= 47$
J $5147 - 958 =$ ▢

Test 12

A $86 \div 3 =$ ▢
B $119 \div$ ▢ $= 7$
C $464 \div 6 =$ ▢
D $820 \div 9 =$ ▢
E $390 \div$ ▢ $= 5$
F $72 \div$ ▢ $= 6$
G $320 \div 4 =$ ▢
H $216 \div$ ▢ $= 3$
I $837 \div$ ▢ $= 9$

Test 13

A $7001 -$ ▢ $= 439$
B $49 \times 376 =$ ▢
C $65 + 107 + 394 =$ ▢
D $594 \div 8 =$ ▢
E ▢ $+ 311 = 700$
F ▢ $- 65 = 198$
G $623 \div$ ▢ $= 7$
H $3000 - 463 =$ ▢
I $874 +$ ▢ $= 1003$

Test 14

A $3232 \div 68 =$ ▢
B $798 \div 19 =$ ▢
C $1519 \div 27 =$ ▢
D $1610 \div 46 =$ ▢
E $719 \div 12 =$ ▢
F $6384 \div 79 =$ ▢
G $1332 \div 18 =$ ▢
H $1629 \div 33 =$ ▢
I $2342 \div 46 =$ ▢

Table of contents

This chart shows the organization of the arithmetic content of this book and indicates the kinds of social interests included in the pictures and problems. The book has been organized to keep the subject matter of arithmetic the center of the child's interest. Social material of interest to the child is contained in the pictures and verbal problems. The child's own social interests and experiences are brought to the book through these pictures and problems.

pages	skills and concepts	social interest
3-10	Measurement: concept of scale and standard unit; Fahrenheit thermometer; reteaching of linear, liquid, and weight units	Home activities
11-15	Number system: reteaching through four places; regrouping for carrying and borrowing	The dime store
16	Combining and separating actions	Science
17	Inventory tests on addition basic facts	Science
18-19	Addition: 1-figure numbers (reteaching)	Science
20-23	Addition: 2-figure numbers (reteaching)	Science
24-27	Addition: 3-figure numbers (reteaching)	The school supply store
31	Inventory tests on subtraction basic facts	A picnic
32-35	Subtraction: 2-figure numbers (reteaching)	Science
36-41	Subtraction: 3-figure numbers (reteaching)	Keeping records
46-48	Multiplication: concepts and vocabulary; reteaching of basic facts with products of 18 and less	A school party
49-51	Multiplication: reteaching of basic facts with products of 20 to 36	A school party
55-59	Division: concepts and vocabulary; reteaching of basic facts with dividends of 18 and less	The toy store
60-65	Division: reteaching of basic facts with dividends of 20 to 36	The dime store
70-73	Money: reteaching of equivalent values and counting	Earning money
74-75	Money: reteaching writing of money	Playing store
76-78	Money: reteaching change making	Buying toys
80-81	Money: reteaching addition of	Earning money
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86-87	Problem solving: reteaching finding how many more than or how many fewer than	A school sale
88-90	Problem solving: reteaching finding how many were added (including how many more are needed)	The toy store
91	Measurement: reteaching reduction of measures to larger and smaller units	On the farm
92-94	Problem solving: reteaching finding the number of items to begin with when the number of items added and the number of items resulting are known	Enjoying hobbies
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109	Measurement: abbreviations	
110-113	Multiplication: basic facts with products of 54 to 81	The toy store
114-117	Division: basic facts with dividends of 54 to 81	The toy store
118-119	Division: remainders	The toy store
120-123	Problem solving: reteaching finding the size of the equal groups when the whole group and the number of groups are known (partitive division)	Home activities
126-128	Number system: reading and writing through millions	The hardware store
129	Generalizations about zero and one in multiplication and division	
130-133	Problem solving: finding how many are gone	Home activities
134-137	Problem solving: finding how many items there were at first when the number gone and the number left are known	A fishing trip
138	Number system: writing numbers by annexing zeros for tens and hundreds; preparation for multiplication by 2-figure numbers	

pages	skills and concepts	social interest
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142-146	Multiplication: 2-figure number by 1-figure multiplier	A hobby show
147-153	Multiplication: 3-figure number by 1-figure multiplier	School activities
154-156	Money: multiplication involving money	Earning and spending money
159-160	Multiplication: annexing zeros in multiplying by numbers like 30, 40, 300, and 400; preparation for multiplication by 2-figure multiplier	
161-164	Multiplication: 2-figure number by 2-figure multiplier	Science
167	Multiplication: involving money; 3-figure multiplicand	
167	Number system: reading 4-figure numbers as hundreds	
170-173	Problem solving: finding how many times as large one group is as another (comparison by division)	A visit to a farm
175	Multiplication: involving money	
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198	Checking procedures for computation	
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212-215	Fractions: meaning of equivalent fractions	Paper folding
216-219	Fractions: meaning of improper fractions and mixed numbers; reading and writing	Home activities
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225	Roman numerals to XXXIX	
226-227	Measurement: mile	Observing surroundings
228-229	Measurement: ton	Observing surroundings
230-231	Measurement: tablespoonful, fluid ounce, cup; labels on cans and bottles	Observing surroundings
232-233	Measurement: dry measures; peck, bushel	Observing surroundings
234-236	Problem solving: finding the average	Home and school
237	Numerals used as labels	Home environment
238-239	Geometric figures: parallel lines; angles; rectangles, squares, triangles	Home environment
240-241	Scale drawing: introduction to linear scale on a map	Home environment
244-248	Review	Home environment
249-251	Evaluation	

Headings

Learning how
Lessons using the four-step teaching method to develop or review computational skills

Moving forward
Lessons developing other new material, including basic facts, number system, money, fractions, and measurement

Exploring problems
Lessons developing specific problem-solving techniques

Using arithmetic
Maintenance and practice in solving verbal problems

Keeping skillful
Maintenance and practice in computation, measurement, number system, and money

Checking up
Tests of various types: inventory, achievement, diagnostic (End-of-block), and problem-solving

Thinking straight
Lessons involving special aspects of quantitative thinking

Looking back
Lessons involving reteaching or review of previously taught skills

Side trip
Lessons on various topics related to the arithmetic program: Roman numerals, geometric figures, maps, etc.

Summary of mathematical content

Numerals and the number system
- Reading and writing numerals through millions
- Place value through millions
- Regrouping as required in carrying and borrowing
- Roman numerals to XXXIX
- Numerals as labels
- Rounding off numbers
- Numerals for fractions

Addition of whole numbers (reteaching)
- Addition of three or more one-figure numbers (reteaching)
- Addition of two-figure numbers (reteaching)
- Addition of three-figure numbers (reteaching)
- Addition involving the cents' point (reteaching)
- Checking addition
- Mental calculation involving 2-figure and 3-figure numbers

Subtraction of whole numbers (reteaching)
- Subtraction of two-figure numbers (reteaching)
- Subtraction of three-figure numbers (reteaching)
- Subtraction involving the cents' point (reteaching)
- Checking subtraction
- Mental calculation involving 2-figure and 3-figure numbers

Multiplication of whole numbers
- Basic facts through products of 36 (reteaching)
- Basic facts, products 40 to 81
- Effect of changing order of factors
- Zero and one in multiplication
- Multiplication by numbers ending in one or more zeros
- Multiplication of one-figure, two-figure, and three-figure numbers by one-figure multiplier
- Multiplication of two-figure and three-figure numbers by two-figure multiplier
- Multiplication involving the cents' point
- Checking multiplication

Division of whole numbers
- Basic facts through dividends of 36 (reteaching)
- Basic facts, dividends 40 to 81
- Zero and one in division
- Division by one-figure divisor, quotients of two figures
- Division by two-figure divisor, quotients of two figures (optional work)
- Division involving numbers representing money
- Remainders in division, meaning of
- Checking division

Measurement
- Concept of standard unit and scale
- Recognition of right and wrong procedures
- Measures of temperature (Fahrenheit)
- Measures of liquid capacity—fluid ounce, tablespoon, cup, pint, quart, gallon
- Measures of dry capacity—pint, quart, peck, bushel
- Measures of weight—ounce, pound, ton
- Measures of length—inch, foot, yard, mile
- Measures of time—second, minute, hour, day, week, month, year
- Abbreviations for all measurement units taught
- Reduction of measurement units

Money
- Recognition of coins and paper money (reteaching)
- Value relations among the coins (reteaching)
- Counting money (reteaching)
- Making change (reteaching)
- Reading and writing numerals that represent dollars and cents
- Addition, subtraction, multiplication, and division involving the cents' point

Fractions
- Concept of fractions (reteaching)
- Unit and non-unit fractions through denominators of 16
- Improper fractions and mixed numbers
- Equivalent fractions for denominators taught
- Fractions applied to the inch
- Comparing some fractional parts of equal and unequal things

Geometry
- Parallel lines and right angles
- Recognition of rectangle, square, and triangle
- Linear scale to measure distances on a map

Problem solving
- Finding the new total group when the sizes of the smaller groups are known
- Finding the remaining group when the size of the removed group is known
- Finding the new total group when the size and number of the equal smaller groups are known
- Finding the number of equal groups when the size of the equal groups is known (quotition)
- Finding the size of the equal groups when the number of equal groups is known (partition)
- Finding how many were added or how many more are needed when the number to begin with and the resulting total number are known
- Finding how many there were to begin with when the number added and the resulting total are known
- Comparing two groups by finding how many more or how many fewer one group is than the other
- Finding how many are gone when the number to begin with and the number left are known
- Finding how many there were to begin with when the number gone and the number left are known
- Finding how many times as large one quantity is as another quantity (comparison by division)

Vocabulary

Seeing Through Arithmetic, Book 4, contains 716 different words. The complete list of words is in the Teaching Guide. Of the 716 words total vocabulary, 412 were used in the preceding book, *Seeing Through Arithmetic, Book 3*. Children who have completed The New Basic Reading Program of the Curriculum Foundation Series, through the new *Mare Streets and Roads* (3²), will be familiar with 212 of the 304 words not used in *Seeing Through Arithmetic, Book 3*. For these children, only 92 words will be new in this book. Of these 92 words, 33 are used in the new *Times and Places* and in *Mare Times and Places*.

The following forms of known words are not counted as new: inflected forms made by adding or dropping the endings s, es, *ed, ing*, n, en, and *er, est* of comparison (including those forms made by changing *y* to *i* or *f* to v, dropping the final e, or doubling the final consonant in the root word); possessives; derivatives formed by adding the prefixes *dis-, im-*, or un- and the suffixes -en, *-er, -ful, -ish, -less, -ly*, -ness, *-teen, -th, -ty*, or *-y*; compounds made up of known words; contractions. Also, homographs are not counted as separate words; for example, if *beam* meaning "a long, thick piece of wood" has been introduced, *beam* meaning "to smile" is not counted.

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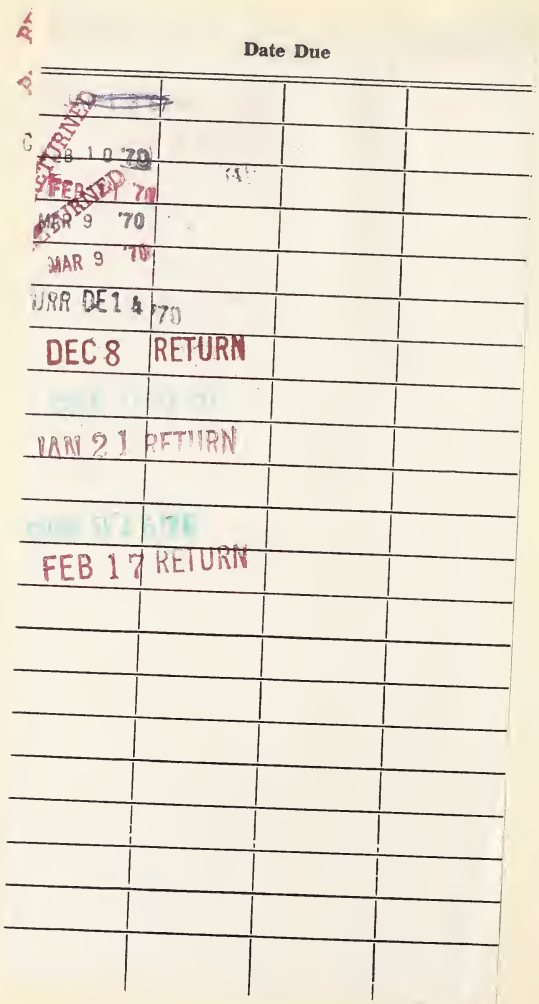

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